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International Mobility: Patterns of Exit and Return of Canadians, 1982 to 2003

by Ross Finnie

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International Mobility: Patterns of Exit and Return of Canadians, 1982 to 2003

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Abstract

This paper exploits the unique strengths of the tax-based Longitudinal Administrative Database to measure the flows of Canadians to other countries and the patterns of return over the period from 1982 to 2003. Overall, approximately 0.1% (i.e., one tenth of 1%) of the adult population leaves the country in any given year. Departure rates have generally moved with the state of the Canadian economy, but the trends have clearly been driven by more than this: declining in the 1980s as the economy was going well; turning up towards the end of the decade, but before the economy began to stall in 1989; rising through the early part of the 1990s as the economy was mired in a deep recession, but then continuing to rise through 1997, by which time a strong recovery was underway; and then declining sharply since 2000—thus stemming what many had thought was an inexorable upwards trend—when economic factors were fairly stable. Departure rates decline with age (except for the youngest group); are lower for couples without children than other family types; are high for those in British Columbia, quite low for Francophone Quebecers, and very high for Anglophones in that province; are somewhat lower for those on Employment Insurance (formerly Unemployment Insurance) and substantially higher for those at higher-income levels; and are very much higher for recent immigrants. Departure rates for those at higher-income levels shifted upwards in the 1990s, but returned to pre-1990s rates in more recent years in the case of men, while the shift was maintained for women. Only a minority of those who leave ever return: about 15% within 5 years of their departure. Return rates have, however, increased significantly since 2000—mirroring to a large extent what was happening on the departure side.

Keywords: brain drain, international migration, immigration, emigration

Executive summary

Through the late 1990s, many thought that Canada's best and brightest were leaving the country in unprecedented numbers. Using the Longitudinal Administrative Database (LAD), constructed from individuals' tax records, this study sheds new light on the extent and nature of the flows of Canadians to other countries and the patterns of return over the period 1982 to 2003, asking who leaves and who returns. It finds that absolute numbers of leavers remain small (0.1% in any given year, i.e., one tenth of 1.0%). However, with the exception of those at the highest income levels, few return.

The LAD is a 20% random sample of all Canadian tax filers constructed from Canada Revenue Agency tax files. It follows individuals longitudinally and matches them into family units on an annual basis, providing individual- and family-level information on incomes, taxes, and basic demographic characteristics.

The departure model uses the following sets of variables: basic demographic characteristics (age, family type, province/region of residence, language, and area size of residence); income (an indicator of having received Employment Insurance [EI] income is included); economic conditions faced by the individual (i.e., provincial and U.S. unemployment rate); a series of calendar year dummy variables (to capture time trends and influences which operate at a national level, such as policy changes); finally, a set identifying recent immigrants and the number of years since immigration.

In the return model, the dependent variable is the probability of returning to Canada in any given calendar year. Unlike the departure model, this uses a hazard model approach, whereby only individuals who are observed to first leave the country are included, and they are tracked in a precise year-by-year fashion from the year of their departure. Individuals' characteristics as of the point of departure are included as regressors, thus identifying the relationship between the rate of return and these attributes.

Raw data show that annual rates of departure from Canada in the 1982-to-2003 period are low, ranging from 0.045% to 0.133%. Departure rates follow the economic cycle to a significant degree: with a stronger economy, there are fewer leavers. But this is by no means a perfect correlation. Other factors are at play as well: the U.S. economy, the Canada–United States Free Trade Agreement and North American Free Trade Agreement, and immigration trends.

Only a minority of those who leave ever return. Over the period covered, about 2.5% returned after one year, and about 15% returned within five years. There was a substantial increase in returns since 2000, however, mirroring what was happening on the departure side. Return rates are (like departure rates) significantly higher for those at higher-income levels, suggesting such individuals are generally more mobile.

The main departure model results show that the rates of leaving the country are fairly average for the youngest individuals (aged 18 to 24), then rise (aged 25 to 34), and decline thereafter.

Couples with no children have low departure rates, a result which contrasts with interprovincial mobility, where having children and being married are generally related to lower mobility rates. By way of contrast, single parents, and single mothers in particular, have relatively high departure rates.

People living in Atlantic Canada are considerably less likely to leave, those in British Columbia (including the territories) have the highest rates, while those in Ontario and the Prairies (including Alberta) are in the middle rank.

Francophones in Quebec have the lowest rates of all Canadians, but Quebec Anglophones have a much higher rate of departure than all other groups. Francophones outside of Quebec have somewhat higher departure rates than English speakers in the province/region in which they live.

Individuals living in larger cities are about twice as likely to leave as rural dwellers, and substantially more likely than those in smaller cities.

Men receiving EI are less likely to leave than other men, but such an effect does not hold for women. The provincial unemployment rate has a significantly negative effect on leaving, while the higher the rate relative to the United States, the greater the likelihood of leaving.

The higher the individual's income, the greater the probability of leaving, especially at the highest income levels ($60,000 to $100,000 and $100,000 and more). To the degree that income levels capture the exit of highly skilled workers, rates of departure are greater for the most talented workers. That said, their numbers are small, as relatively few have incomes at these levels, and the vast majority of leavers are in the lower-income categories.

The immigrant effects are very strong. In a male immigrant's landing year, his chances of leaving the country are 10 times greater than those of a non-immigrant Canadian with similar characteristics. Rates rise over the early years in the country, beginning to decline 6 years following immigration—although even those who have been in Canada as long as 16 years (or more) have more than double the rate of leaving the country in any given year than non-immigrants.

The adjusted trends show that once controlling for other factors, rates have not moved as dramatically over time as the raw data suggest. Otherwise put, some of the swings in the 1990s and since were linked to factors explained by the variables included in the models.

Individuals are more likely to return after having been away two years than just one, but then the rate of return declines. The rates reach a maximum of 4.4% in year 2, then drop to 3.7%, 2.5%, and 2.0% over the following three years. After five years, 15.1% of those who had left had come back.

Those 65 and older are the least likely to return, the two younger groups (18 to 24 and 25 to 34) are the most likely, and the other groups are in between. There is no clear pattern by family status, except that lone parents have the lowest rates of return.

Provinces with lower rates of departure have higher rates of return. Francophone Quebecers are the most likely, and Anglophone Quebecers the least likely to return. Similarly, those in rural areas and smaller cities are more likely to return than those from larger cities.

Those who had EI before departing do not behave differently than others. A higher provincial unemployment rate means a lower rate of return, but the effect is not statistically significant. The same is true for the relative Canada–United States unemployment rate.

Return rates of high-income individuals are significantly higher than those with lower income levels. They are more evidently mobile—in the case of returns as well as departures.

Among recent immigrants, those who leave within the first few years of arriving in Canada are less than half as likely to come back as non-immigrant Canadians, and while immigrant behaviour gradually moves towards that of non-immigrants with the number of years they had been in Canada before leaving, their lower rates of return persist even after having been in Canada more than a dozen years.

When the calendar year variables are plotted, rates declined through 1990, remained flat through the 1990s, then rose after 2000. Thus, while rates of leaving the country generally rose through most of the 1990s, return rates remained flat. When departure rates fell significantly after 2000, return rates rose. Whatever was attracting Canadians abroad through the 1990s, return rates held steady, while the more recent changes which appear to have been working in the opposite direction since 2000 hold for both departures and returns.

I. Introduction

Interest in patterns of exit and return of Canadian has been long-standing. During the late 1990s, there was concern regarding both the volume of the exits by Canadians from Canada, and the characteristics of those leaving. Over a period of years some empirical evidence on the level and characteristics of the flows emerged, and three points are generally made with respect to the findings.[1]

First, the total number of Canadians leaving the country as a percentage of the overall population was, even in the 1990s, quite small (typically less than one fifth of one percent of the population in any given year), especially when judged by historical standards. These amounted to an average of about 22,000 individuals (adults) per year through the first part of the 1990s (up to 1997). These flows were also only one side of a long-run, and still continuing, net inflow of migrants: in raw numbers, immigrants continue to typically outnumber emigrants by a fair degree.

Second, flows to the United States—the principal destination—were also low when seen in a long-term perspective, but did rise through the 1990s. Those increases took place, however, in a context where labour mobility was increasing globally, especially for certain high-skill types, and the American and Canadian economies were becoming increasingly integrated, due at least partly to the Canada–United States Free Trade Agreement and the North American Free Trade Agreement. Furthermore, the U.S. economy was exceptionally strong through the latter part of the 1990s, thus attracting workers, especially highly skilled individuals drawn to the exceptional growth at the high end of the American earnings distribution.

Third, most of those leaving were widely distributed across the income, skill, and occupation distributions. There were, however, certain groups of 'knowledge' (highly skilled) workers for whom the movements represented substantial shares of the domestic stock and which were far greater than the offsetting inflows. These groups included doctors, nurses, engineers, scientists, high-tech workers, university professors, and higher-income individuals in general.

Most previous empirical research was, however, limited by the unavailability of the sort of general and extended longitudinal database that is best suited to the measurement and analysis of the emigration of Canadians and their return—or not—to this country.

1. See Finnie (2001, 2005) for more detail.

The contribution of this paper is to exploit the unique strengths of the Longitudinal Administrative Database, constructed from individuals' tax records, to shed new light on the extent and nature of the flows of Canadians to other countries and the patterns of return over the period from 1982 to 2003.

It begins by tracking the overall rates of emigration on an annual basis over this period, drawing particular attention to the important trend shifts which separate the 1980s, the earlier part of the 1990s, and the years since that time. It then models the departure process at the micro level where the probability of emigrating from Canada from one year to the next is taken to be a function of an individual's personal attributes and economic circumstances. A similar approach is then used to document and model, using a hazard framework, the rate (probability) of return to Canada for those who depart. The paper thus captures the general (empirical) structure of leaving and returning to Canada in a general manner, with special attention paid to differences among individuals at different income levels (the measure of "skill" available in the data).[2]

The paper is laid out as follows. In the next section, the data, samples, and estimation models are discussed. The third section presents the analysis of Canadian emigration (i.e., outflows), beginning with some simple graphs of overall departure rates over time, followed by the presentation of the estimation results for the model, which essentially addresses the question: "Who leaves?" The analysis of the rates of return among those who leave is then presented in the fourth section of the paper, which begins with some simple empirical hazard rates and then proceeds with the econometric models which capture this process ("Who returns?"). The final section of the paper summarizes the major findings and points to their significance.

II. The data, samples, and models

II.1 The Longitudinal Administrative Database and sample selection

The Longitudinal Administrative Database (LAD) is a 20% random sample of all Canadian tax filers (and non-filing spouses identified by tax filers) constructed from Canada Revenue Agency tax files. The LAD follows individuals longitudinally (i.e., over time) using their individual identifiers based on social insurance numbers (SINs) (SINs themselves are not included in the LAD in order to protect individual confidentiality) and matches the individuals into family units on an annual basis, thus providing individual- and family-level information on incomes, taxes, and basic demographic characteristics in a dynamic framework. The first year data were collected for the LAD is 1982, and the file ran through 2003 when this work was undertaken, thus determining the period covered by this analysis.

The LAD is uniquely well-suited to this analysis for a number of reasons. First, the LAD is closely representative of the underlying adult population. Unlike some other countries (such as the United States) the rate of tax filing in Canada is very high across all income levels. Higher-income Canadians are required by law to file, while lower-income individuals have strong incentives to file in order to recover income tax and other payroll tax deductions made throughout the year and to receive various tax credits and other benefits (e.g., the National Child Benefit). The full set of annual tax files from which the LAD is constructed cover upwards of 95% of the target adult population (official population estimates), and are especially strong among the working-age

2. This paper builds on Finnie (2005) in a number of ways. First, it updates the empirical record from 1999 through 2003, a period over which some fairly dramatic changes have occurred. Second, the models are extended to incorporate additional macroeconomic measures and immigrant identifiers, and in other ways, including various checks for robustness. Third, myriad other smaller changes have been made.

populations covered here, thus comparing very favourably with survey-based databases in this regard.

Furthermore, given that most individuals file tax forms every year, attrition from the LAD is quite low, meaning that it remains representative longitudinally as well as cross-sectionally. This again contrasts with survey-based databases, which typically have problems in following individuals over time, *especially* those who move, potentially introducing sample bias to a study of mobility such as this one.[3]

Second, the longitudinal nature of the LAD and its income tax basis allows individuals who leave the country to be identified, which is not generally an easy task in survey-based databases precisely because it requires tracking exactly those who are no longer in the country. And of an even greater challenge, the LAD also permits the identification of those who subsequently return to Canada, no matter how many years have passed, where they have been or what they have been doing in the meantime. In both cases—departures and returns—the longitudinal structure also allows for the modelling of these processes in an appropriate fashion.

A third, and related advantage is the massive sample size of the LAD, as it not only allows the identification of leavers and returners, but also in sufficient numbers to carry out a meaningful analysis. This again overcomes what is an impossible challenge for most general databases because the number of such persons in the general population is low, since relatively few individuals leave the country in any given year, and even fewer return after that.

Fourth, the LAD's extended period of coverage, from 1982 to 2003, allows trends in both leaving and returning to be analysed in a consistent manner on an annual basis over the last two decades, and also permits the tracking of the return process for a relatively long periods of time following an individual's departure.

Finally, while lacking in some of the socio-economic variables typically found in survey databases (e.g., education level), the LAD possesses a sufficient number of variables (including the individual's income level) to allow for the analysis of how leaving and returning to Canada varies with individuals' personal and situational attributes. These include basic demographic characteristics (age, sex, marital status, etc.), income sources, place of residence and other information that can be linked to individuals' records through that information (e.g., the provincial unemployment rate), and the identification of recent immigrants and their year of arrival in this country (only recently available in the LAD).

II.2 Sample selection

Individuals were included in the analysis in a given year if they were over the age of 18 and had no missing data for the variables used in the analysis. The latter resulted in a very small number of deletions because the relevant information is generally required, by law, to be provided on individuals' tax forms or is otherwise available from that information (e.g., the 'geographical' information is based on individuals' addresses). Current full-time post-secondary students were also

3. Atkinson, Bourguignon and Morrison (1992) and the Organisation for Economic Co-operation and Development (1996) discuss the typically better coverage and lower attrition of administrative databases over survey databases. See Finnie (1998) for evidence on attrition from the Longitudinal Administrative Database and the relationship of this attrition to migration behaviour over selected intervals.

deleted from the analysis because of the special situation of this group and the labour market focus of the present study, thus leaving students to be better-treated in a separate analysis.

For the departure analysis, individuals could be included in the analysis for some years but not others, depending on their years of inclusion in the LAD and whether they passed the sample selection criteria in those years. The unit of analysis is a person-year pair of years, meaning that one observation is created for each time a person is observed in one year and then the following year (to permit the identification of a departure) and the person otherwise meets the sample selection criteria. Standard errors are corrected for the repeated observations of given individuals stemming from this person-year sample construction even though, with the massive size of the LAD samples, this rarely makes any meaningful difference in the results.

For the return analysis, an individual's departure must first be observed; thus the individual must have met the sample selection criteria just described and been observed to leave the country in the manner described further below. Individuals are then 'followed' (as described below) until either i) they are observed to return to Canada, or ii) they reach the end of the sample period (i.e., 2003), at which point the record is right-censored.

II.3 The models

The departure model

The departure model uses a logit specification, where the dependent variable is whether the individual leaves the country in a given year. It can be expressed as follows:

$$(1)\ y_{it}(departure) = \beta_0 + X_{it-1}\,\beta_1 + \varepsilon_{it},$$

where y_{it} (*departure*) is the indicator of whether individual i left Canada in year t. β_0 is an intercept and X_{it-1} is a row vector of explanatory variables corresponding to the individual's situation in t-1 and which are therefore pre-determined ('exogenous') to the probability of moving in t. β_1 are the coefficients representing the relationship between these variables and the propensity to move.[4]

Several sets of explanatory variables are included in the models. First are a range of basic demographic characteristics. These include current age (captured by a series of dummy variables), family type (couple with children, couple without children, unattached individual, single parent), province/region of residence, an indicator of being the member of a 'minority' (official) language group (English in Quebec, French outside Quebec—thus leaving the province/region variables on their own to represent the majority language group in each jurisdiction),[5] and area size of residence (rural areas and small towns, smaller cities, larger cities).

A second set of variables represent broad indicators of the individual's current economic situation. The individual's market income (primarily earnings but including other non-government sources of

4. The information in individuals' tax files given in the LAD generally pertains either to annual accumulations over the course of the year in question (e.g., incomes), or the situation holding at year end (e.g., place of residence, marital status, and age). The precise date of departure from the country in any given year for those who leave is, for example, not available, nor are the individual's characteristics at precisely that point in time. Hence the annual nature of the model in terms of the definition of the dependent variable and the explanatory variables to which moving is related.
5. The only language identifiers available on the LAD are English and French, defined by the language of the tax form used by the individual.

income such as asset-based income) is measured with a series of categorical variables representing different levels, from zero to upwards of $100,000 (measured in 2003 current dollars). This is a particularly important set of variables in terms of assessing the mobility of highly skilled workers, since income is essentially used as a proxy for 'knowledge'—and could in fact be argued as comprising the more pertinent measure.[6] An indicator of having received Employment Insurance (EI) (formerly Unemployment Insurance) income in the year in question is also included: Do those on EI leave the country at higher or lower rates than others?

A couple of variants of the model allow for the relationship between the probability of leaving and the individual's income level to differ in the 1990s and then again in more recent years (both relative to the 1980s), to test if the rate of departure for those at the higher end of the economic ladder shifted relative to the rate for those at lower levels (holding other factors constant)—as would presumably be expected if there had been an increase in the departure rates of highly skilled workers.

A third set of variables represent the economic conditions faced by the individual. These include the unemployment rate of the province in which the individual is living plus the ratio of the provincial versus U.S. (national) unemployment rate to capture the effect of the relative economic conditions in the two countries on moving.[7]

The models also include a series of calendar year dummy variables to capture any time trends (without imposing any functional form on those trends) and any other significant influences which operate at a national level and which have shifted over time and are not otherwise captured by the variables included in the models. Policy changes would, for example, be captured by these variables. Various combinations of the relevant unemployment rate and calendar year variables are presented in order to tease out the effects of each of these, and their interactions.

Finally, a set of variables identifying recent immigrants and the number of years since immigration are included to make broad comparisons between immigrants and the non-immigrant Canadian population. The re-emigration of immigrants could, of course, be a subject worthy of its own treatment, and the analysis is kept intentionally simple here, meant only to serve as an introduction to that broader topic.[8]

Separate models are estimated for men and women due to the different structures of emigration behaviour for these two groups.

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6. The notion of 'knowledge' is not always well-defined. Sometimes, for example, it includes entrepreneurs, whether or not they are 'highly skilled workers'. The income indicator included in the models would normally capture those income-related definitions better than an education measure, but both types of measures would clearly be desirable.

7. The provincial unemployment rates represent the usual Statistics Canada measures as available on CANSIM, while the relative Canada–United States variable uses an alternative measure of the Canadian unemployment rate constructed (again by Statistics Canada) to be more directly comparable to the U.S. rate (e.g., adjustments are made for the age of the population considered, the precise definition of being unemployed, and so on).

8. This immigrant information, only recently available on the LAD, is taken from the Immigration Data Base (IMDB). The IMDB incorporates landing information, including country of origin, education level, and class of immigrant, and covers all immigrants (i.e., 100% of this group) who arrived in Canada since 1980. Further work on the movement of immigrants, including their inter-provincial mobility, is currently in progress.

In summary, this modelling approach represents a stochastically well-behaved, reduced-form specification which suits the goals here of identifying the various individual characteristics, labour market attributes, economic factors, and year effects associated with leaving Canada. This method has previously been used (Finnie, 2004) to analyse the analogous issue of interprovincial mobility in Canada and has the positive attributes of being quite intuitive, of making good use of the data available (rich in some ways but limited in others), and of being well-suited to the goal of identifying the relationships between leaving Canada and the explanatory variables included in the models, including the time trends that have been subject to such focus in both the technical literature and public debate.

The return model

The return model is similar to the departure model, but with some slight adjustments applied to the samples and model used so as to represent a proper hazard model specification. It resembles the departure model—now basically turned on its head—in that the dependent variable is the probability of *returning* to Canada (as opposed to leaving) in any given calendar year. But what differs from the departure model is the use of a hazard model approach, whereby only individuals who are observed to first leave the country are included, and they are tracked in a precise year-by-year fashion from the year of their departure. The model thus includes a set of dummy variables representing the elapsed number of years the person has been out of the country to capture the relevant duration effects.[9]

The model can be represented as follows:

$$(1)\ y_{it}(return) = \gamma_0 + X_{1iT}\gamma_1 + X_{2iT}\gamma_2 + DUR\gamma_3 + \varepsilon_{it},$$

where y_{it} (*return*) is the indicator that individual i returns to Canada in year t. X_{1i} is the same type of row vector of explanatory variables as included in the departure models, here corresponding to the individual's situation at the point of departure from Canada (denoted by T). X_{2iT} is a limited set of time-varying explanatory variables, in practice limited to the relative Canada–United States unemployment rate.[10] *DUR* represents the vector of duration terms, capturing the number of years since the person departed from Canada (corresponding to the annual nature of the data). The γ's represent the vectors of coefficients representing the relationship between returning to Canada and the explanatory variables.

9. See Kiefer (1990) for how this approach represents a logit-based hazard specification in the presence of discrete data. This type of model is used by Finnie and Sweetman (2003) and Huff Stevens (1994, 1995) to analyse poverty dynamics, by Gunderson and Melino (1990) to model strike durations, by Ham and Rea (1987) to analyse jobless durations, and by Finnie and Gray (2002) to model earnings dynamics.

10. Current age might also be worth including as a time-varying regressor, but age at departure is included in X_1, and current age plus years-since-departure are equal to current age, precluding the identification of more than two of the three relevant parameters. Other variables in X_1 are not really defined or relevant in terms of their current values after the individual leaves the country since they describe the individual's characteristics and situation at the point of departure, while the equivalents of these measures for the person when they are living out of the country are not available.

An observation is created for each individual who leaves the country for each year until he or she is observed to return. If the individual is not observed to return, he or she is right-censored at the end of the data period.[11]

One novel feature of this model is that individuals are tracked over a period of time they are not actually observed in the data—when they are out of the country. This approach is legitimate, however, and facilitates the analysis in question because individuals *are* observed if and when they return to Canada—the event in question.[12] In short, the working assumption is that individuals are still out of the country (i.e., the spell in question continues) until a return is observed (indicating the end of that spell—the relevant transition).

As indicated, individuals' characteristics as of the point of departure are included as regressors in the return model. This approach thus identifies the relationship between the rate of returning and these attributes—which are in many ways the most relevant in terms of understanding the return phenomenon from a Canadian perspective. For example, how do return rates vary by age at departure, the province from which the individual left, the income level in the year prior to departure, and so on? The duration terms provide a sense of the dynamic nature of the relevant hazard process. The calendar year variables similarly represent the current year (not the year during which the person left).

The dependent variables: Departure and return

The identification that a person left Canada in a given year is made through the relevant declaration on individuals' tax forms. The place for such declarations is at the top of the first page of the form and is therefore not easily missed. There are, furthermore, significant incentives for individuals to make such a declaration if the situation applies. First, most Canadians are eligible for tax refunds at year-end, and this is especially true for those who leave the country because their annual incomes are not as high as their running (monthly) amounts would have indicated, leaving them in lower tax brackets than those that would have been used for their deductions—and hence eligible for greater refunds. Secondly, if an individual ever wants to return to Canada, even to visit, having one's tax matters cleanly dealt with in this way is of clear advantage.

In previous work (Finnie, 2005), other broader definitions of departure were also used. A second definition added those observed to have a declaration of non-residence in Canada (for tax purposes) without having severed one's ties as completely as by the initial definition to the declared departures. A third definition also included those observed to have a foreign mailing address, even though they still had a legitimate tax province and did not declare a departure on their tax form. The major findings—both raw rates of departure as well as the model results—were largely insensitive to the definition used, except for the general levels (i.e., expanding the definition obviously increased the numbers leaving). The definition used here was ultimately deemed best-suited to the purposes of the analysis due to its clear meaning and consistency over time.

The definition of return is simply the obverse of the departure definition, and is indicated by an individual making the analogous tax form declaration ("returning to Canada"). Broader definitions

11. Return rates need to be adjusted for the fact that individuals who die while out of the country would no longer be at risk of returning. This is done by applying age-specific mortality rates and right-censoring individuals' records at the time they are deemed to die by this probabilistic assignment. The principal findings are not, however, affected by this treatment.

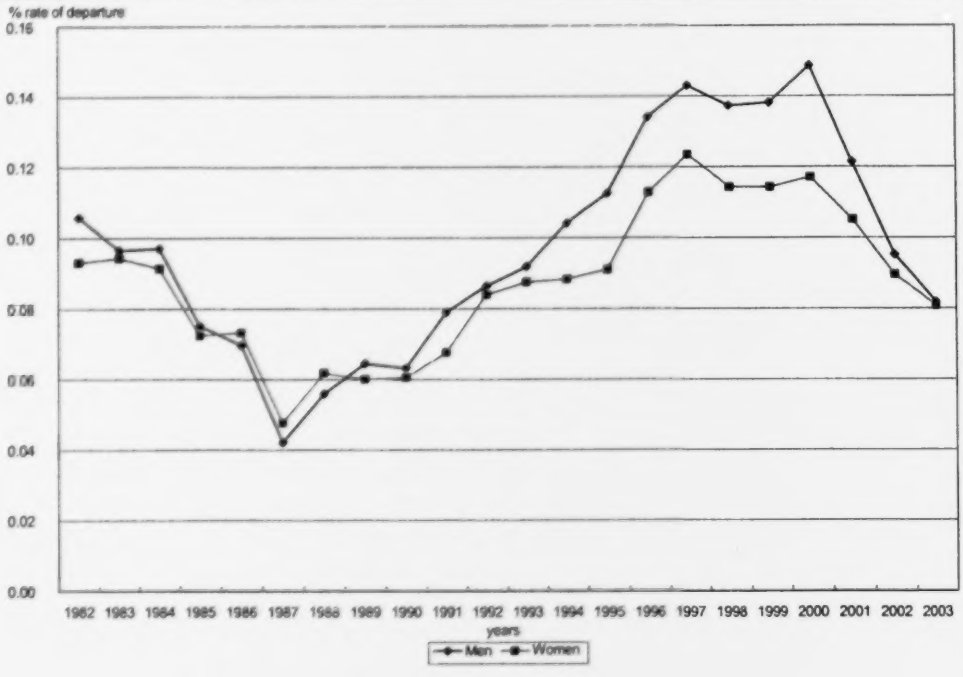
12. Individuals are supposed to use the same social insurance number when they return, and are otherwise linked to that earlier number in the LAD if they get a new one.

were again used in earlier work, these essentially based on the reverse of the departure definitions, as were various combinations of the different departure and return definitions, but the major results were again little affected by the precise definitions employed.

III. Raw departure rates

Figure 1 (and its supporting table) show the annual rates of departure from Canada over the 1982-to-2003 period covered by the data. Overall, the rates are generally very low, ranging from a low of 0.045% (i.e., under one half of one tenth of 1%) to a high of 0.133% (a little under one and a half tenths of 1%). In absolute numbers, these rates represent around 15,000 leavers in the first year, 1982, and approximately the same number in 2003, the final year, with a peak at approximately 27,000 leavers in 2000. Rates are generally a little higher for men than women, this gap being widest when rates were also highest, through the latter part of the 1990s.

Figure 1 Rates of departure from Canada, 1982 to 2003



Rates of departure from Canada, 1982 to 2003

Year	Men	Women	All	Year	Men	Women	All
	percent				percent		
1982	0.106	0.093	0.100	1993	0.092	0.087	0.090
1983	0.097	0.094	0.095	1994	0.104	0.088	0.096
1984	0.097	0.094	0.095	1995	0.113	0.091	0.102
1985	0.075	0.072	0.074	1996	0.134	0.113	0.123
1986	0.070	0.073	0.071	1997	0.143	0.123	0.133
1987	0.042	0.048	0.045	1998	0.137	0.114	0.125
1988	0.056	0.062	0.059	1999	0.138	0.114	0.126
1989	0.064	0.060	0.062	2000	0.149	0.117	0.132
1990	0.063	0.060	0.062	2001	0.121	0.105	0.113
1991	0.079	0.068	0.073	2002	0.095	0.090	0.092
1992	0.086	0.084	0.085	2003	0.082	0.081	0.081

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

These rates and absolute numbers generally correspond to other estimates in the literature for the years other data are available (Finnie, 2001). The LAD data, however, represent an annual series using a consistent definition of departure which spans an extended period of time up to the relatively recent past such as cannot be found elsewhere.

The departure rates follow the economic cycle to a significant degree—but far from perfectly. The substantial declines which occurred through the mid- to late 1980s correspond to the strong growth in the Canadian economy over that period, but the rates bottom out in 1987, whereas the economy continued to grow through 1988 before beginning to stall at the end of 1989. Departures rose steadily (apart from 1990) through the first part of the 1990s, when the economy was stuck in a

lingering deep recession, and continued to do so right through 1997, even though the Canadian economy began to recover quite strongly in 1996. After finally turning down in 1998, departure rates stalled in 1999, then rose again in 2000.

Sharp declines in departure rates then occurred from 2001 through 2003—and these in the absence of any correspondingly significant economic developments (i.e., the Canadian economy continued to grow as in previous years). The annual declines since 2000 in fact outstrip the substantial rises seen through most of the 1990s—which were seen by some observers as inexorable and as harbingers of continued further rises into the future. In short, what rose so dramatically subsequently declined in an even more pronounced fashion.

Departure rates have certainly not returned to their lows of the late 1980s—and the 2003 rates are still approximately double those of earlier levels. But they are also down 45% (men) and 31% (women) from their year 2000 highs, and the downward trend shows no sign of levelling off through the end of the data period covered—although speculation beyond that year is of course nothing more than that.

The raw data thus suggest the importance of several primary influences in determining the observed time trends. First, as noted, the stronger the Canadian economy, the fewer the number of leavers. This seems to be a clear and continuing factor.

But through much of the 1990s, much more than economic factors seem to have been at play, since rates rose even as the Canadian economy evidenced strong recovery, then fell sharply over a period of relatively consistent economic performance. One factor in the earlier of these years was undoubtedly the even greater strength of the U.S. economy over this period, especially for those at the very top, and its vacuuming up of highly skilled talent from Canada as much as from other countries.[13]

A second likely factor was the problems experienced in certain specific sectors in Canada which added considerable 'push' to other 'pull' factors, these including the health sector (cutbacks in the health system caused doctors and nurses to seek opportunities elsewhere), the universities (professors—for similar reasons), research and development (engineers, scientists, etc.), and others.

Third, the Canadian and U.S. economies were linked more tightly than ever through first the Canada–United States Free Trade Agreement, then the North American Free Trade Agreement and related agreements; these included changes which made it easier for individuals to move between the countries to seek work.

Finally, certain immigrants who arrived in this country in the 1990s appear to have left soon thereafter—those from Hong Kong being a special case in point; conversely, their rates of returning to their home countries may have also shifted over this period.[14]

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13. See Finnie (2001) for further discussion of this point and those that follow. It should be noted that the LAD does not generally identify the country to which the person moved. For somewhere about half of all leavers, there is an address code for the individual's final correspondence with tax authorities, but the other half have a Canadian address or otherwise one that is not useable, and even the address information that is available is somewhat uncertain, uneven, and generally difficult to work with. Hence, it is not possible to model departures to different countries—in particular the United States versus elsewhere—separately.

14. See DeVoretz and Zhang (2004) for the case of Hong Kong immigrants in particular.

However, while these factors—and perhaps others—might explain the 'specialness' of the 1990s, the sharp declines observed since then might need to be explained by similarly particular circumstances, since the relative gain in strength of the Canadian economy was likely not sufficiently important to account for the large shifts identified in the data, no new trade deals have been reached, and there have been no other overarching structural shifts in the Canadian economy, especially with respect to at least some of the more relevant problem sectors which accounted for some of the large outflows of the 1990s.

That said, however, let us start with those sectoral factors. In fact, with the recovery in government spending, a significant amount of money has been pumped into the health sector, and some into the universities as well (especially on the research side)—two areas of significant loss in the 1990s. These developments have, therefore, probably accounted for at least some stemming of the 1990s tide, although these are inherently difficult factors to quantify in any precise manner—and any such exercise is certainly beyond the capacity of the LAD, which has limited information on industry and occupation of employment.

Second, though, is perhaps a combination of new 'socio-political' factors. The events of '9-11' and the subsequent tightening of U.S. borders, the war in Iraq, the re-election of George W. Bush, and the general shift of the United States to the right have perhaps made that country both more difficult to get into and a less desirable place to live for some Canadians who might have been attracted there in earlier years—seeking better career opportunities without excessive compromise in terms of the 'culture' of the society or politics of that country.

There may also have been a 'feedback' mechanism at work, as one hears stories of doctors (and others) returning to Canada after discovering that moving to the United States is not as rosy as may have been thought for a whole range of reasons: doctors facing high malpractice insurance costs and restrictions placed on their practice of medicine imposed by health maintenance organizations and private health insurance companies; the costs of private security, of sending their children to good schools, and other expenses draining substantial sums from the raw earnings premia often observed for U.S. workers; and the shock of being exposed to what is essentially a rather different culture in a wide range of ways.

But again we are into the realm of speculation, and this is an empirical paper. Suffice it say, therefore, that there have been important swings in the rate of emigration from Canada over the last two decades, that the rises of the 1990s were strong but still left the overall numbers of departures rather small (if not unimportant), and that there has been a substantial slowing, and then reversal, of those latter trends starting in 1997 but showing the greatest and most sustained momentum since 2000. We now move to analyse some of the micro factors associated with "who moves."

IV. The departure models

IV.1 The basic models

The main departure model results are shown in Table 1. The findings are presented in probability space, as derived from the underlying logit models. To do this, the model parameter estimates were first used to calculate a baseline probability where all the categorical (dummy) variables were set to zero and the unemployment rate and the ratio of the Canada–United States unemployment rates were set to their sample means (8.7% and 1.2% respectively). This generates the 'baseline rates' of 0.061% and 0.083% shown in the first row of the two regressions (men and women) and in the rows of each set of explanatory variables (for ease of reference). These rates thus correspond to the

characteristics represented by the omitted categorical variables in the models: age 35 to 44, being in a couple with children, living in Ontario, not being a minority (French) language speaker, residing in a large city, not receiving any Employment Insurance (EI) (formerly Unemployment Insurance) benefits, having a market income of $30,000 to $59,999, being a non-immigrant, and 1991 set as the calendar year.[15]

Each categorical variable is then 'turned on' one at a time, and the relevant coefficient estimates are used to calculate a new predicted probability. These are the other numbers shown in the table. The statistical significance of the associated coefficient estimates is shown in the usual fashion (0.05 and 0.01 confidence levels). The full logit model results are shown in Appendix Table A1.[16]

Holding other factors constant, the rates of departure from the country are fairly average for the youngest individuals (18 to 24 years), then rise (25 to 34 years), and decline thereafter. This pattern is consistent with a life-cycle model where the costs and benefits of moving, both economic and psychological, would point towards doing so earlier in life, but—it would appear—only after getting a start in one's career.[17]

15. Note that the rates are shown in *percentage* terms (with a potential range of 0 to 100), not probabilities (0 to 1), as would be more normal for a logit (0 to 1 probability) model. This approach is adopted for clarity of exposition and discussion in the face of the numbers being so small. The baseline 0.06% for men thus corresponds to the rates of 0.05% to 0.15% shown in Figure 1, and is shown instead of the 0.0006 rate this would represent in probability terms.

16. The coefficient estimates are of course based on all the variation in the independent variables in the sample, while the predicted probabilities shown in the main table are based on using those estimates to generate first the baseline probabilities, and then the probabilities associated with each of the indicated changes. There are various conventions for presenting such probability effects (e.g., fixing all the explanatory variables at their sample means, even in the case of sets of categorical variables where a corresponding baseline 'person' obviously does not exist), any of which would generate similar probability effects, the only (minor) differences being principally due to the non-linearities of the underlying logit models used in the estimation.

17. See Finnie (2004) for further discussion of the underlying logic of the variables included in the models and findings for the related dynamic of inter-provincial mobility.

Table 1 Departure models, basic specification (predicted probabilites)

	Men	Women
	percent	
Baseline rate	0.061 **	0.083 **
Age category		
18 to 24 years	0.056 **	0.106 **
25 to 34 years	0.102 **	0.150 **
35 to 44 years[1]	0.061	0.083
45 to 54 years	0.047 **	0.065 **
55 to 64 years	0.033 **	0.041 **
65 years and over	0.017 **	0.020 **
Family status		
Couple with children[1]	0.061	0.083
Couple without children	0.023 **	0.034 **
Single with children	0.082 **	0.083
Single without children	0.072 **	0.106 **
Province/region		
Ontario[1]	0.061	0.083
Atlantic	0.042 **	0.060 **
British Columbia	0.088 **	0.123 **
Prairies	0.069 **	0.093 **
Quebec	0.024 **	0.031 **
Minority language		
English in Quebec	0.245 **	0.340 **
French outside Quebec	0.078 **	0.098 **
Majority language[1]	0.061	0.083
Area size of residence (inhabitants)		
0 to 14,999	0.030 **	0.042 **
15,000 to 99,999	0.038 **	0.050 **
100,000 and more[1]	0.061	0.083
Employment Insurance		
None[1]	0.061	0.083
Some	0.036 **	0.060 **
Provincial unemployment rate (%)		
8.7[1]	0.061	0.083
9.7	0.036 **	0.061 **
Canada–United States unemployment ratio		
1.2[1]	0.061	0.083
1.3	0.097 **	0.108 **

Table 1 Departure models, basic specification (predicted probabilites) (concluded)

	Men	Women
	percent	
Baseline rate	0.061 **	0.083 **
Market income		
Less than $10,000	0.060	0.056 **
$10,000 to $29,999	0.061	0.065 **
$30,000 to $59,999[1]	0.061	0.083
$60,000 to $99,999	0.129 **	0.134 **
$100,000 and more	0.360 **	0.240 **
Years since immigration		
Non-immigrant[1]	0.061	0.083
0	0.619 **	0.739 **
1 to 3	0.755 **	0.750 **
4 to 6	0.841 **	0.871 **
7 to 9	0.419 **	0.473 **
10 to 12	0.291 **	0.314 **
13 to 15	0.212 **	0.237 **
16 and over	0.140 **	0.198 **
Calendar year		
1983	0.101 **	0.139 **
1984	0.111 **	0.139 **
1985	0.074 **	0.104 **
1986	0.065	0.102 **
1987	0.038 **	0.065 **
1988	0.048 **	0.083
1989	0.052 **	0.076
1990	0.047 **	0.075 **
1991[1]	0.061	0.083
1992	0.072 **	0.107 **
1993	0.076 **	0.107 **
1994	0.087 **	0.111 **
1995	0.088 **	0.111 **
1996	0.097 **	0.129 **
1997	0.095 **	0.134 **
1998	0.084 **	0.120 **
1999	0.084 **	0.120 **
2000	0.087 **	0.120 **
2001	0.069 **	0.109 **
2002	0.057 *	0.094 **
2003	0.064	0.108 **

* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

1. Baseline rates.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Family status effects might be expected to reflect a similar set of cost and benefit factors, but the results are not entirely as might have been anticipated. The outlier group here is couples with no children, who have inordinately low departure rates, a result which contrasts with the case of interprovincial mobility, where having children and being married are generally (independently and

together) related to lower mobility rates, not higher ones. Evidently, leaving the country is different than moving across provincial lines in this respect—at least for couples.[18] The relatively high departure rates of single parents, single mothers in particular, could represent individuals not identified as married in the LAD data joining partners abroad.[19]

The probability of leaving the country varies considerably by province and language group. People living in Atlantic Canada are considerably less likely to leave than most others, those in British Columbia (including the territories) have the highest rates, while those in Ontario and the Prairies (including Alberta) are in the middle rank.

Perhaps most interesting here, however, are the findings for Quebec. Francophones in that province have by a wide margin the lowest rates of all Canadians. But the English-Quebec minority language indicator shows that Quebec Anglophones have a much higher rate of departure than not only Francophone Quebecers, but all other groups as well. Included in the infamous exodus of Quebec Anglophones from Quebec have apparently been disproportionate numbers who left the country entirely. Interestingly, Francophones outside of Quebec have somewhat higher departure rates than English speakers in the province/region in which they live.

Not surprisingly, individuals living in larger cities are, *ceteris paribus*, about twice as likely to leave as rural dwellers, and substantially more likely than those in smaller cities as well.

Those receiving EI (formerly Unemployment Insurance) in a given year are less likely to leave the country. This could reflect a lack of employability (in other countries as in Canada), a dependency on this income support program, an absence of funds to finance a move, or some combination of these and/or other factors. It is interesting to contrast this result with the higher rates of interprovincial mobility found for individuals receiving EI (Finnie, 2004).

The provincial unemployment rate appears to have a significantly negative effect on leaving, while the higher the rate relative to the United States, the greater the likelihood of leaving. These variables are discussed further below.

The market income variables are very interesting and indicate that the higher the individual's income (mostly earnings), the greater the probability of leaving. This is especially true at the very highest-income levels ($60,000 to $99,999 and $100,000 and more).[20] This tendency is particularly marked among men. To the degree income levels capture the mobility of highly skilled workers, rates of departure are clearly greater for the country's most talented workers. That said, their numbers are small, since relatively few individuals have incomes at these levels and the vast majority of leavers are in the lower-income categories.[21]

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18. The strong positive effects for being aged 25 to 34 (just seen) might be affecting these family effects. That is, most couples without children are this age, meaning that in the case of a couple without children *in this age category,* both effects would have to be taken into account.

19. Although individuals are supposed to declare their marital status on their tax forms and the LAD attempts to match common-law partners into couples (using individuals' ages, addresses, and other information), some matches are missed and some individuals are therefore erroneously identified as unmarried or, in this case, a single parent where the spouse is simply out of the country.

20. Market income includes wages and salaries, net self-employment and professional income, dividend and interest income, and all other private (non-government) sources except for capital gains (omitted partly due to adjustments related to tax rules in certain years).

21. See Finnie (2001).

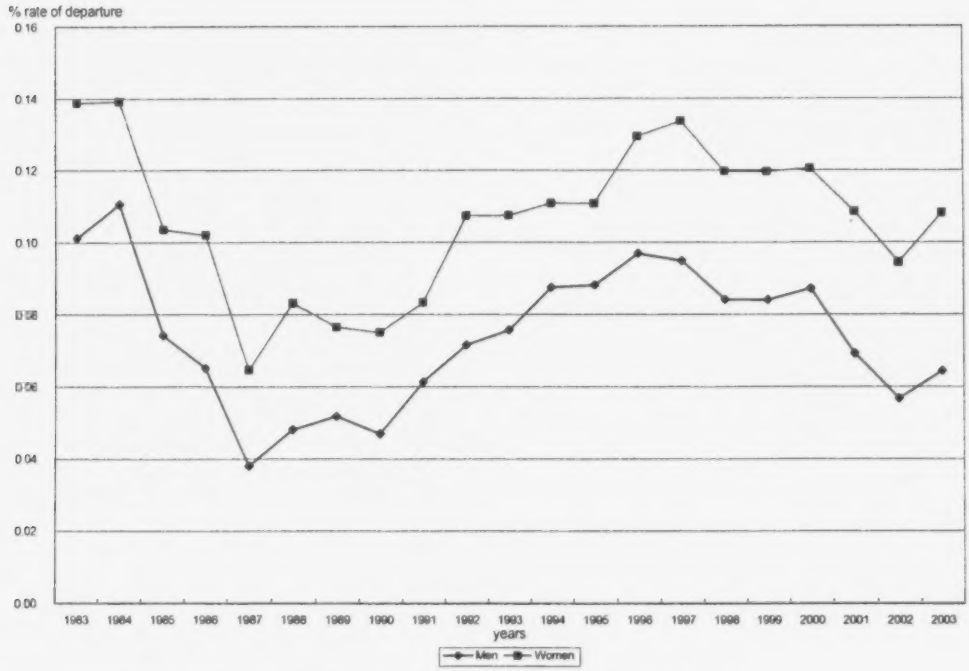
The immigrant effects are very strong and take an interesting pattern. In a male immigrant's landing year, his chances of leaving the country are a full 10 times greater than those of a non-immigrant Canadian with similar characteristics (as captured by the models). These rates then actually rise further still over the early years in the country. The rates begin to decline only 6 years following immigration, at which point they do so fairly sharply—although even those who have been in Canada as long as 16 years (or more) have a departure rate that is more than double in any given year than that of non-immigrants.[22]

The raw trends in departure rates over time were shown above. What do the year patterns look like after the factors represented by the variables included in the models are taken account of? These are captured by the calendar year variables included in the models. The associated predicted probabilities shown in Table 1 are also plotted in Figure 2. The raw and adjusted trends are in fact very similar. Departure rates declined significantly through most of the 1980s, began to rise after bottoming out in 1987 and increased through 1997, after which they again declined, except for a small uptick in 2003. The story would, therefore, again be one of significant cyclical effects (even after including the unemployment rate variables discussed above and further below), but also some important shifts—upward in the 1990s and then back down since that time, especially since 2000.

In fact, the rates in the final years of the data are closer to the historical lows of the late 1980s than was seen in the raw rates—but then so too were the highs not so high as in the raw data. Once controlling for other factors, then, rates have generally not moved as dramatically over time as the raw data suggest. Otherwise put, some of the swings—first upward and then downward—in the 1990s and since were evidently linked to factors explained by the variables included in the models. However, strong residual shifts remain evident. One curiosity in these results is the small increase in 2003, as this was not seen in the raw data. Only time can tell if this is the beginning of a new trend—or a small and relatively inconsequential blip.

22. It would be interesting to separate moves 'back home' from those on to a third country. Such investigations are left for a later analysis. (See also the challenges posing such an analysis discussed above.)

Figure 2 Departure models, calendar year effects



Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

One final point regarding these calendar year effects pertains to the issue of recent immigrants. The set of controls for immigrants and their years since immigration included in the standard model captures the general differences in departure rates between immigrants and the non-immigrant population over the period covered by the analysis. But was there a shift in immigrants' behaviour over time? In particular, did the Hong Kong phenomenon have a particular effect? Most importantly, were any such shifts strong enough to affect these overall time trends? The data indicate that the answer is no. Appendix Figure A1 shows the year effects where two different sets of controls are added to the models: first, a set of immigrant–year interactions to allow the calendar year patterns to take their own shape for immigrants, and second, an additional set of interactions especially for those who came to Canada from Hong Kong. While some of these interactions are in fact statistically significant (results available from the author) the figures clearly indicate that the overall (general) calendar year effects are practically unchanged when special consideration is taken of immigrants in this way.[23]

IV.2 The unemployment rate and year variables

Tables 2a and 2b show (for men and women) the results for various models including different combinations of the provincial unemployment rate, the ratio of the Canada–United States unemployment rates (the Canadian rates again at the provincial level), and the (residual) calendar year effects. The year variables pick up effects that moved in a general way (i.e., at the national level) over time or which are otherwise not captured by the other variables included in the models,

23. Perhaps the most interesting finding is a significant decline in the rate of emigration or re-emigration among those from Hong Kong in the mid-1990s, presumably reflecting the uncertainty of what was going to happen to the former British colony as it was handed over to China and the perception of Canada as a safe haven in that time of uncertainty.

while the provincial unemployment rate and Canada–United States unemployment ratio will be identified by differences in these measures across provinces as well as over time (although it should be remembered that a set of province/region dummy variables is also included in the models—thus capturing any consistent differences along this dimension). The first column in each table repeats the standard specification discussed above.[24]

Table 2a Departure models, unemployment and calendar year effects — Men

	Models			
	I	II	III	IV
	percent			
Baseline rate	0.061 **	0.063 **	0.062 **	0.078 **
Provincial unemployment rate (%)				
8.7	0.061	...	0.062	0.078
9.7	0.036 **	...	0.055 **	0.066 **
Canada–United States unemployment ratio				
1.2	0.061	...	...	0.078
1.3	0.097 **	...	...	0.151 **
Calendar year				
1983	0.101 **	0.083 **	0.084 **	...
1984	0.111 **	0.088 **	0.091 **	...
1985	0.074 **	0.066	0.067	...
1986	0.065	0.059	0.060	...
1987	0.038 **	0.036 **	0.035 **	...
1988	0.048 **	0.047 **	0.047 **	...
1989	0.052 **	0.054 **	0.052 **	...
1990	0.047 **	0.049 **	0.048 **	...
1991	0.061	0.063	0.062	...
1992	0.072 **	0.067	0.067 **	...
1993	0.076 **	0.067 *	0.068 *	...
1994	0.087 **	0.080 **	0.082 **	...
1995	0.088 **	0.085 **	0.086 **	...
1996	0.097 **	0.097 **	0.097 **	...
1997	0.095 **	0.097 **	0.097 **	...
1998	0.084 **	0.091 **	0.090 **	...
1999	0.084 **	0.094 **	0.092 **	...
2000	0.087 **	0.100 **	0.097 **	...
2001	0.069 **	0.080 **	0.077 **	...
2002	0.057 *	0.062	0.060	...
2003	0.064	0.065	0.064	...

... not applicable
* Indicates significance at the 5% level.
**Indicates significance at the 1% level.
Note: The models also include the other variables indicated in the basic specification.
Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

24. The other variables shown in Table 1 were also included in these models, but the results are not shown.

Table 2b Departure models, unemployment and calendar year effects — Women

	Models			
	I	II	III	IV
	percent			
Baseline rate	0.083 **	0.085 **	0.067 **	0.110 **
Provincial unemployment rate (%)				
8.7	0.083	...	0.067	0.110
9.7	0.061 **	...	0.049	0.097 **
Canada–United States unemployment ratio				
1.2	0.083	...		0.110
1.3	0.108 **	...		0.168 **
Calendar year				
1983	0.139 **	0.124 **	0.100 **	...
1984	0.139 **	0.122 **	0.099 **	...
1985	0.104 **	0.097 **	0.078 **	...
1986	0.102 **	0.097 **	0.078 **	...
1987	0.065 **	0.062 **	0.050 **	...
1988	0.083	0.083	0.066	...
1989	0.076	0.078	0.062	...
1990	0.075 **	0.077 *	0.061 **	...
1991	0.083	0.085	0.067	...
1992	0.107 **	0.103 **	0.083 **	...
1993	0.107 **	0.100 **	0.081 **	...
1994	0.111 **	0.105 **	0.085 **	...
1995	0.111 **	0.109 **	0.087 **	...
1996	0.129 **	0.130 **	0.104 **	...
1997	0.134 **	0.136 **	0.108 **	...
1998	0.120 **	0.125 **	0.099 **	...
1999	0.120 **	0.128 **	0.101 **	...
2000	0.120 **	0.131 **	0.103 **	...
2001	0.109 **	0.118 **	0.093 **	...
2002	0.094 **	0.099 **	0.078 **	...
2003	0.108 **	0.109 **	0.086 **	...

... not applicable

* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Note: The models also include the other variables indicated in the basic specification.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

These variables are clearly inter-related, but a number of general findings are worth noting. First, the estimates for each variable do not generally change across the different specifications—despite their (potential) connectedness. Hence, it is less important to choose a 'best' model, and it is possible to think of the different variables as capturing somewhat different influences.

Second, the effects of the provincial unemployment rate are always negative and of a substantial magnitude: a higher unemployment rate is associated with a significantly lower (not higher) probability of leaving the country: the 'wrong' sign if we think individuals leave Canada to seek better opportunities when the economy is not performing as well. However, the higher the *relative* Canadian (provincial) rate to the U.S. rate, the greater the probability of leaving: the 'correct' result.

An increase in a province's unemployment rate thus has two effects: a negative direct effect capturing the unemployment effect alone, and a positive effect related to the rise in the Canada–United States ratio. If we take the two effects together, a rise of 1% in a provincial unemployment rate has a slightly negative overall effect, shifting the average probability of leaving from the baseline 6.1% to 5.7% in the case of men, and from 8.3% to 7.9% for women. The 'direct effect' thus dominates the 'ratio effect,' and the overall influence is still of the 'wrong' sign, but the net influence is not very large.

The provincial unemployment rate on its own would thus appear to capture a variety of effects. One of these is certainly the economic performance of the province in which the individual lives, but also the performance of other economies which presumably also affect departure rates—both inside and outside of Canada—with which this variable is correlated. A lower unemployment rate in Canada might indicate not just a sluggish economy here, but a slowing down of economic activity—and reduced job opportunities—in other countries as well. A second effect is likely the role of other (unobserved) factors (i.e., liberalized trade and border-crossing rules) that underlie the observed shifts over time in departure rates with which the unemployment rate is again correlated. This is especially likely given that there were strong, broad swings in the Canadian unemployment over the period studied, including a declining unemployment rate through the middle and latter part of the 1990s when departures were rising (not falling—the 'correct effect' for the unemployment rate) for other reasons.

The *relative* Canada–United States unemployment rate is, in contrast, better behaved probably because it has more precise meaning—especially once the general macro conditions of Canada and, to some degree, other countries' economies are already controlled for by the straight provincial rate on its own.[25]

Finally, the year variables show the same basic patterns in all specifications, and basically take the same form as previously discussed.

So, what do we take from these findings? First, that the state of the Canadian (provincial) economy and its performance relative to other countries are significant determinants of the flows out of the country. But second, that it is much more than such economic factors that have driven the wide swings in emigration rates in the last two decades, and the correlation of those factors with the Canadian (and American) unemployment rates preclude us from properly identifying the role of these latter factors.[26]

IV.3 Shifts in income patterns over time

The results shown in Table 3a are based on models which include the interaction of the income variables with two sets of dummy variables allowing for shifts in the income patterns first in the 1990s and then since 2000. If individuals at higher-income levels were relatively more (or less) likely to leave in one of the later periods (relative to the 1980s baseline comparison group), this

25. Neither a national-level Canadian unemployment rate nor the ratio of this rate to the U.S. rate can be used in these specifications because of the inclusion of the set of dummy year variables, since the model would not be identified.

26. Replacing the unemployment rates used here with the rate of change in real gross domestic product generates a similar set of findings (results available from the author).

would show up as a set of positive (negative) coefficients on the interactions with the higher income terms relative to the lower ones.[27] The relevant relationships are graphed in Figure 3a.[28]

The results suggest that there was in fact a substantial increase in the (relative) departure rates of those at higher-income levels relative to the $30,000-to-$59,999 control group in the 1990s. This is seen in the positive and statistically significant coefficients on the interactions of the 2 top income categories with the indicators of the 1990-to-1999 period in the table, and in the (relative) upward shift in departure rates after 1990 for individuals (men and women both) at these income levels graphed in the figures. The effects are negative for the two lowest-income groups for men (much weaker for women), thus suggesting a continuum of this shift in income effects.

The higher-income shifts are, however, actually negative (although not significant) for the subsequent period (after 2000), at least in the case of men, suggesting that whatever shift occurred in the 1990s no longer held after 2000. Furthermore, while the probabilities of leaving are considerably higher for those at higher-income levels (as discussed earlier) the *shifts* over time of this effect for the highest-income class (where both the differences in levels and the shifts are greatest) are not all that large: predicted probabilities of 0.285% (for the baseline pre-1990 period, 0.342% for the 1990-to-1999 period (an increase of 20%), and down to 0.275% for 2000 to 2003 (Table 3a).[29]

27. Again the models include the other variables shown in Table 2 but these are once more not shown.

28. The graphs in the period up to 1989 reflect the general (common) year effects plus each of the basic market income variables (i.e., without interactions). From 1990 to 1999 they show the combination of the general year effects for that period, the general income effects, plus the income interactions for that period. The years since 2000 reflect a similar set of influences, in this case using the later set of year and income interaction variables. The key cut-points are thus 1990 and 2000, at which point the rates shift differentially by income level. The widening and narrowing of the gaps by income level *within* each of the decade periods is entirely due to the non-linearities of the underlying logit model used in the estimation.

29. Recall that the predicted probabilities take into account all the relevant variables (interactions), in particular the general year effects, the general income interactions, and the specific period–income interactions. Hence, the predicted probability for the highest-income group is still well above that of the baseline $30,000-to-$59,999 group for the 2000-to-2003 period even though the period–income shift is negative because the general income effects are still strongly positive.

Table 3a Departure models — Income effects

	Men	Women
	percent	
Baseline rate	0.053 **	0.069 **
Market income		
Less than $10,000	0.054	0.044 **
$10,000 to $29,999	0.057 **	0.057 **
$30,000 to $59,999	0.053	0.069
$60,000 to $99,999	0.106 **	0.093 **
$100,000 and more	0.285 **	0.137 **
Market income, interaction with 1990 to 1999		
Less than $10,000	0.047 **	0.044
$10,000 to $29,999	0.049 **	0.053
$30,000 to $59,999	0.053	0.069
$60,000 to $99,999	0.118 **	0.116 **
$100,000 and more	0.342 **	0.206 **
Market income, interaction with 2000 and over		
Less than $10,000	0.063 **	0.054 **
$10,000 to $29,999	0.055	0.052
$30,000 to $59,999	0.053	0.069
$60,000 to $99,999	0.101	0.115 **
$100,000 and more	0.275	0.224 **
Calendar year		
1983	0.100 **	0.114 **
1984	0.109 **	0.114 **
1985	0.074 **	0.085 **
1986	0.065	0.084 **
1987	0.038 **	0.053 **
1988	0.048 **	0.069
1989	0.051 **	0.063
1990	0.047 **	0.062 *
1991	0.053	0.069
1992	0.062 **	0.089 **
1993	0.065 **	0.089 **
1994	0.076 **	0.092 **
1995	0.076 **	0.092 **
1996	0.084 **	0.108 **
1997	0.082 **	0.111 **
1998	0.073 **	0.100 **
1999	0.073 **	0.100 **
2000	0.100 **	0.115 **
2001	0.079 **	0.103 **
2002	0.065 *	0.090 **
2003	0.073	0.102 **

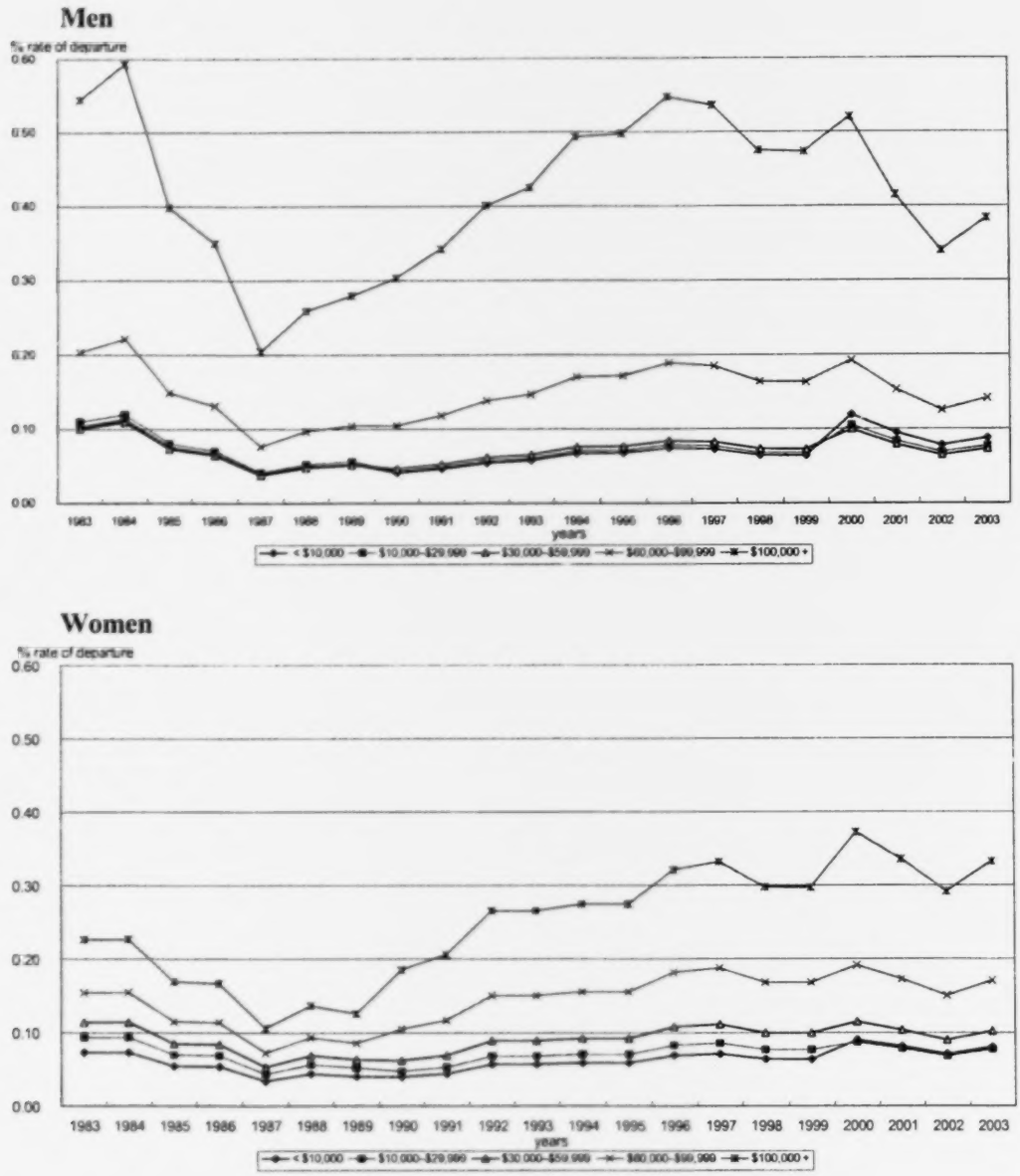
* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Note: The models also include the other variables indicated in the basic specification.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Figure 3a Departure models — Income effects



Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

For women, in contrast, the pulling away at the top was as strong in the latter period as through the 1990s—although there are relatively few (fewer) of them at these income levels.

In Table 3b and Figure 3b (full models results in Appendix Table A2b), results are shown using a somewhat different set of cut-points for the income interactions: pre-1990, 1990 to 1997, and 1998 to 2003. These better reflect the most distinct phases of the Canadian economy over the period covered by the data: expansion, recession, recovery. The results are, however, much the same as those just shown. First, there are upward shifts for those at higher incomes for the middle period, statistically significant for both income groups for men, but just the $60,000-to-$99,999 group for

women (the $100,000 and more category is significant at the 5.6% level). But then these differences disappear after 1997 for men, but in fact become even stronger for women.

These findings are of course largely consistent with the general story line emerging here, but add some nuances. For men, there was a general shift in departure patterns in the earlier and middle parts of the 1990s but then a reversal of those tendencies around 1997, and these patterns are now seen to have been somewhat—but not dramatically—stronger for those at higher-income levels than those in the middle and lower ranks. For women, the same holds, except for the higher-income shifts which maintained themselves into the latest data period.

Table 3b Departure models — Alternative income year

	Men	Women
	percent	
Baseline rate	0.048 **	0.053 **
Market income		
Less than $10,000	0.052 *	0.051
$10,000 to $29,999	0.052 **	0.049 *
$30,000 to $59,999	0.048 **	0.053 **
$60,000 to $99,999	0.097 **	0.068 **
$100,000 and more	0.259 **	0.113 **
Market income, interaction with 1990 to 1997		
Less than $10,000	0.041 **	0.042 **
$10,000 to $29,999	0.044 **	0.043 **
$30,000 to $59,999	0.048 **	0.053 **
$60,000 to $99,999	0.110 **	0.084 **
$100,000 and more	0.330 **	0.150
Market income, interaction with 1998 and over		
Less than $10,000	0.053	0.052
$10,000 to $29,999	0.048 *	0.043 **
$30,000 to $59,999	0.048 **	0.053 **
$60,000 to $99,999	0.097	0.094 **
$100,000 and more	0.256	0.179 **
Calendar year		
1983	0.105 **	0.106 **
1984	0.114 **	0.106 **
1985	0.076 **	0.078 **
1986	0.067	0.076 **
1987	0.039 **	0.048
1988	0.048 **	0.059 *
1989	0.052 **	0.054
1990	0.048 **	0.053 *
1991	0.048 **	0.053 **
1992	0.056 **	0.069 **
1993	0.059 **	0.070 **
1994	0.069 **	0.072 **
1995	0.069 **	0.071 **
1996	0.076 **	0.082 **
1997	0.074 **	0.084 **
1998	0.084 **	0.085 **
1999	0.084 **	0.084 **
2000	0.087 **	0.084 **
2001	0.069 **	0.076 **
2002	0.057 *	0.068 **
2003	0.064	0.077 **

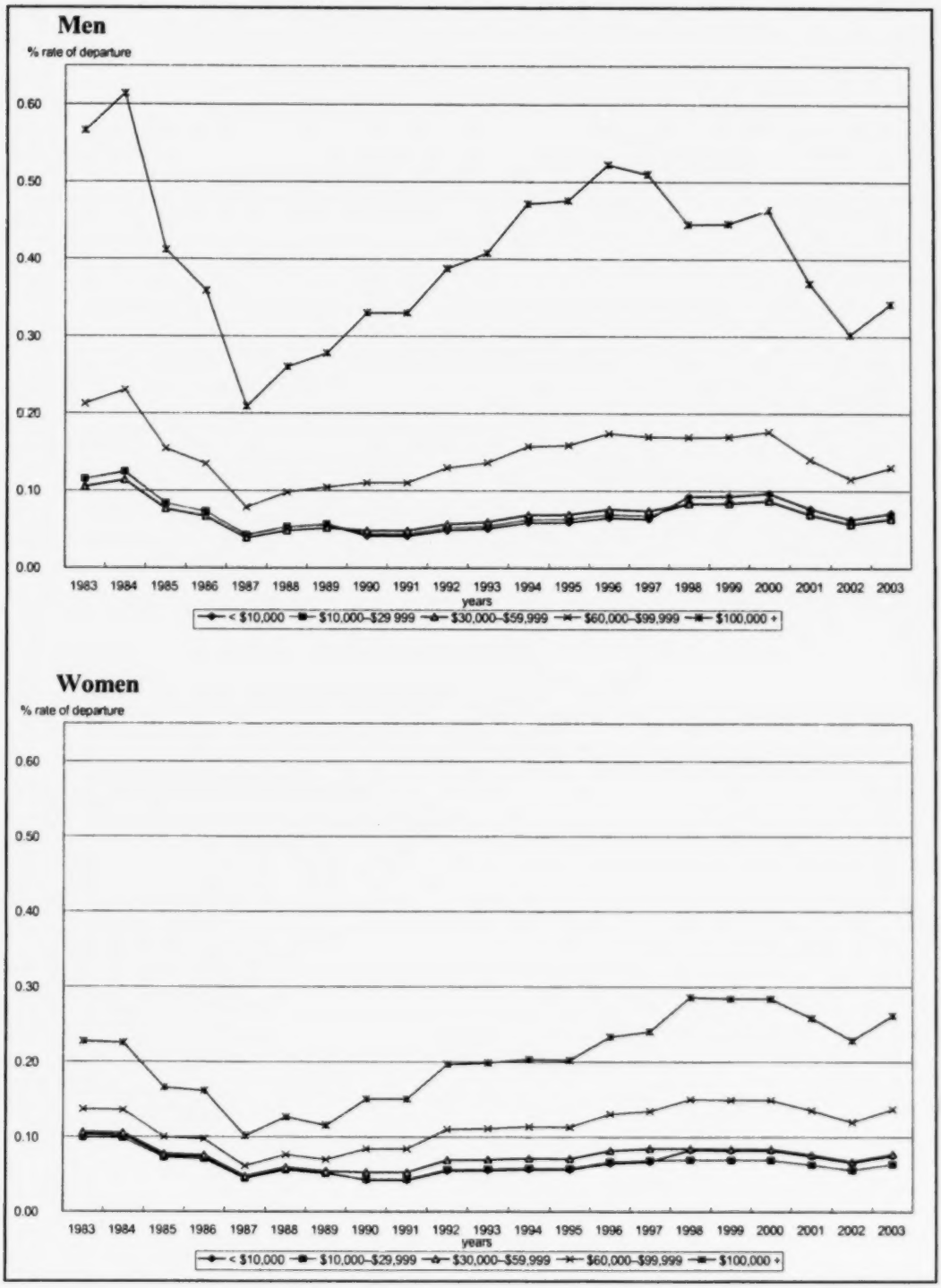
* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Note: The models also include the other variables indicated in the basic specification.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Figure 3b Departure models — Alternative calendar year interactions



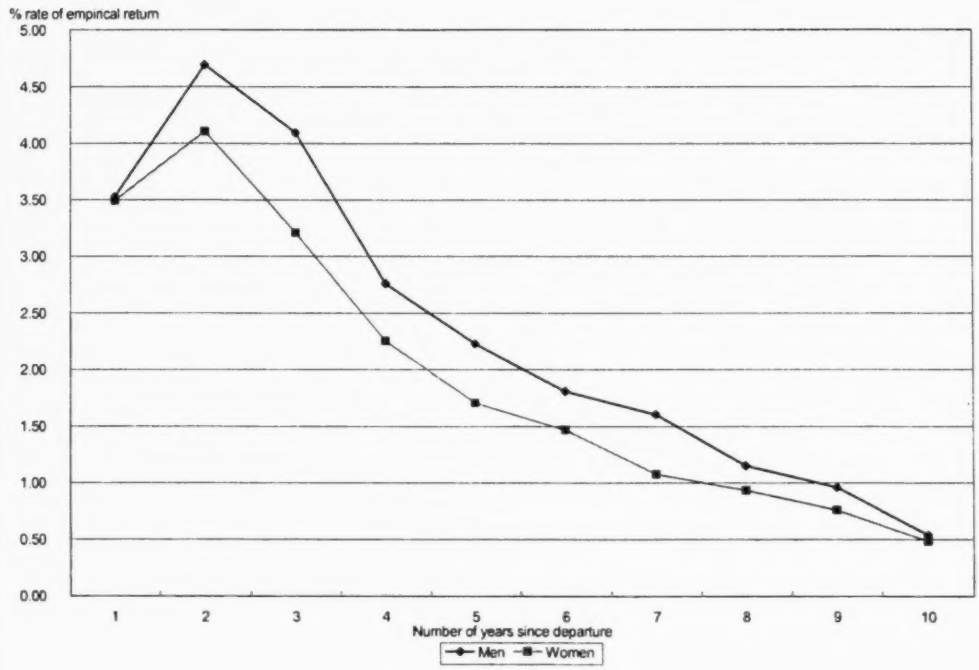
Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

V. Return

V.1 Empirical hazard rates

Figure 4 shows the simple empirical hazard rates of return to Canada for those observed to leave at any time over the period covered by the data. Interestingly, individuals are more likely to return after having been away two years than just one, but after this the rate of return declines, taking the classic negatively sloped form of most empirical hazards. The rates vary from 3.5% to reach the maximum of 4.4% in year 2, to 3.7%, 2.5%, and 2.0% over the following three years (men and women taken together).[30]

Figure 4 Empirical return rates (years since departure)



Empiral return rates (years since departure)

	1	2	3	4	5	6	7	8	9	10
	percent									
Men	3.527	4.692	4.093	2.759	2.228	1.810	1.604	1.150	0.961	0.539
Women	3.492	4.106	3.207	2.251	1.704	1.467	1.075	0.935	0.760	0.484
All	3.511	4.416	3.683	2.517	1.988	1.645	1.350	1.046	0.863	0.516

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

These hazard rates imply survivor rates (i.e., the percentage of individuals still out of the country) of 96.5%, 92.2%, 88.8%, 86.6%, and 84.9%. Thus, after 5 years, 15.1% of those who had left had subsequently come back. These rates are, however, averaged over the whole period covered by the

30. These empirical hazard rates are calculated in the conventional fashion: the percentage who return in the year in question among those individuals *still at risk* in that year (i.e., still living out of the country).

analysis, and do not control for any of the factors accounted for in the models. We now turn to the return models to take a deeper look at these dynamics.

V.2 The return models

The results for the return models are shown in Table 4. It is important to keep in mind throughout that these results are for those already identified as leavers, who are mobile individuals to start with. Keeping this conditioning in mind helps make better sense of some of the findings.[31]

Table 4 Return models, basic specification

	Men	Women
	percent	
Baseline rate	2.503 **	2.733 **
Age category		
18 to 24 years	3.597 **	3.819 **
25 to 34 years	3.253 **	3.393 **
35 to 44 years	2.503	2.733
45 to 54 years	2.649	2.722
55 to 64 years	2.749	2.472
65 years and over	1.587 **	1.850 **
Family status		
Couple with children	2.503	2.733
Couple without children	2.685	3.116
Single with children	2.144 **	2.534 *
Single without children	2.439	2.968
Province/region		
Ontario	2.503	2.733
Atlantic	3.745 **	3.645 **
British Columbia	2.844 **	3.008
Prairies	3.192 **	3.447 **
Quebec	4.070 **	4.049 **
Minority language		
English in Quebec	1.776 **	1.968 **
French outside Quebec	3.657 **	3.069
Majority language	2.503	2.733
Area size of residence (inhabitants)		
0 to 14,999	2.876 **	3.049 *
15,999 to 99,000	2.737	3.175 **
100,000 and more	2.503	2.733

31. The results are presented in the same fashion as the departure models seen above, and again the full set of logit model results are included in the appendix.

Table 4 Return models, basic specification (continued)

	Men	Women
	percent	
Baseline rate	2.503 **	2.733 **
Employment insurance		
None	2.503	2.733
Some	2.523	2.845
Provincial unemployment rate (%)		
8.7	2.503	2.733
9.7	1.132	1.311
Canada–United States unemployment ratio		
1.2	2.503	2.733
1.3	3.248	3.823
Market income		
Less than $10,000	1.741 **	2.391 **
$10,000 to $29,999	2.167 **	2.539 *
$30,000 to $59,999	2.503	2.733
$60,000 to $99,999	3.172 **	3.364 **
$100,000 and more	3.699 **	2.720
Years since immigration		
Non-immigrant	2.503	2.733
0	1.197 *	2.018
1 to 3	0.906 **	1.208 **
4 to 6	1.135 **	1.135 **
7 to 9	1.231 **	1.630 **
10 to 12	1.436 **	1.489 **
13 to 15	1.360 **	1.356 **
16 and over	1.540 **	1.412 **

Table 4 Return models, basic specification (concluded)

	Men	Women
	percent	
Baseline rate	2.503 **	2.733 **
Years since departure		
1	2.503	2.733
2	3.391 **	3.524 **
3	2.981 **	2.674
4	2.002 **	1.923 **
5	1.599 **	1.368 **
6	1.252 **	1.242 **
7	1.238 **	0.920 **
8	0.894 **	0.792 **
9	0.719 **	0.663 **
9 and more	0.398 **	0.349 **
Calendar year		
1984	3.123	5.232 **
1985	3.590 **	3.229
1986	3.971 **	3.838 **
1987	2.777	2.328
1988	3.279	2.693
1989	2.360	2.841
1990	2.142	2.279
1991	2.503	2.733
1992	2.402	1.650 **
1993	2.748	2.940
1994	2.867	2.500
1995	2.738	2.679
1996	2.473	2.435
1997	2.603	2.532
1998	2.543	2.932
1999	2.797	2.932
2000	2.725	2.963
2001	2.808	3.391
2002	3.526 **	3.580 *
2003	3.821 **	3.940 **

* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

The baseline rates are 2.5% and 2.7% (men and women), corresponding to the same characteristics noted above for the departure models, with the added condition of having been away just one year (i.e., the duration term). These are of course much higher than the departure rates, which were in the order of a fraction of one tenth of 1%, but this makes sense: the former apply to the whole population in any given year, and leaving Canada is a rare event in this respect, whereas the return models apply to those who have already left, among whom returning is a much more common event (as the raw hazard rates just shown indicate).

By age, those 65 and older are easily the least likely to return, the 2 younger groups (18 to 24 and 25 to 34) are the most likely, and the other groups are in between these. There is no clear pattern by family status, except that lone parents have the lowest rates of return.

Provinces with lower rates of departure tend to also have higher rates of return. Consistent with this, Francophone Quebecers are the most likely, and Anglophone Quebecers the least likely to return of all groups. Similarly, those in rural areas (men and women) and smaller cities (women only) are more likely to return than those from larger cities.

Those who had Employment Insurance (formerly Unemployment Insurance) before departing do not appear to behave differently than others. The (current) unemployment rate in the province in which the person was living before leaving has the 'correct' negative sign (a higher unemployment rate means a lower rate of return), but the effect is not statistically significant. The same is true for the relative Canada–United States unemployment ratio.

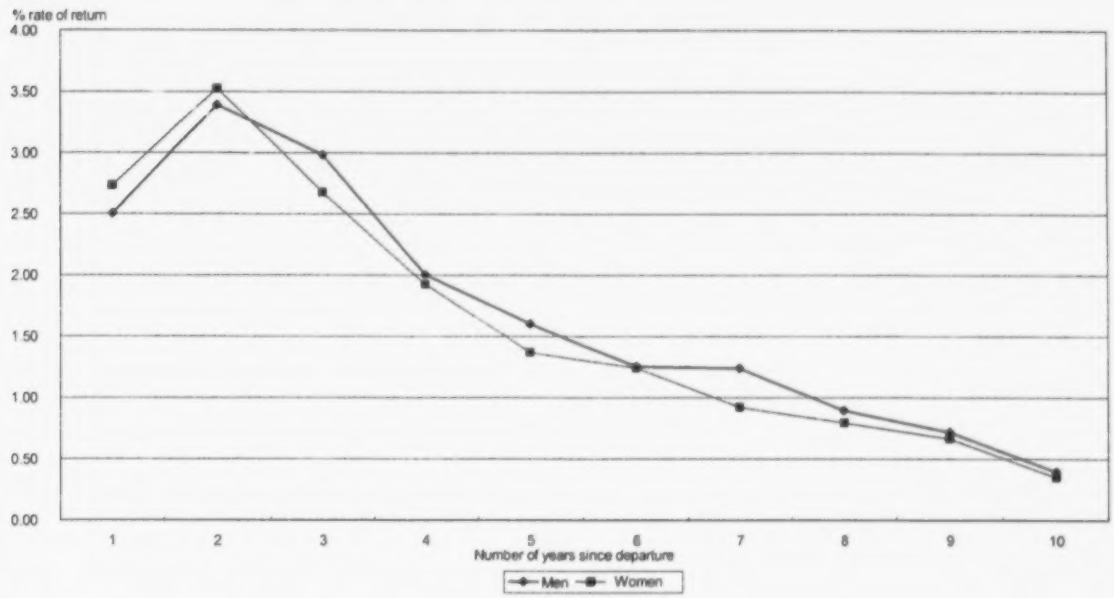
Of considerable interest is the pattern of return by income level. It was seen above that high-income individuals ($60,000 to $99,999, and $100,000 and more) were several times more likely to leave than those at lower-income levels, but now we see that their return rates are also significantly higher, especially among men. The differences are not as great as in the case of departures, but do still point to those at higher-income levels being more generally mobile—in the case of returns as well as departures.

The immigrant patterns, conversely, show that recent immigrants are not only much more likely to leave Canada than others, but also less likely to come back. Those who leave within the first few years of arriving in Canada are less than half as likely to come back as non-immigrant Canadians, and while immigrant behaviour gradually moves towards that of non-immigrants with the number of years immigrants had been in Canada (before leaving), their lower rates of return persist even after having been in Canada more than a dozen years. Presumably many of their departures represent 'returning home' and are thus to be expected, but probing deeper into the immigrant patterns is left for later research.

The duration terms are plotted in Figure 5 as well as given in Table 4. They show the same general shape as the simple empirical hazard rates presented above: a rise in the second year relative to the first, and a decline afterwards.[32]

32. These models do not attempt to adjust for unobserved heterogeneity for two reasons: the results of such exercises depend on untestable assumptions regarding the underlying form of the omitted heterogeneity and the standard routines commonly employed for these tests are not widely available for the logit specification used here. The duration results may, therefore, be interpreted as representing both 'pure' duration effects and any associated/correlated unobserved heterogeneity. That said, the empirical patterns of these combined effects are perhaps of greatest interest to those wishing to understand the general empirical tendencies captured by these models.

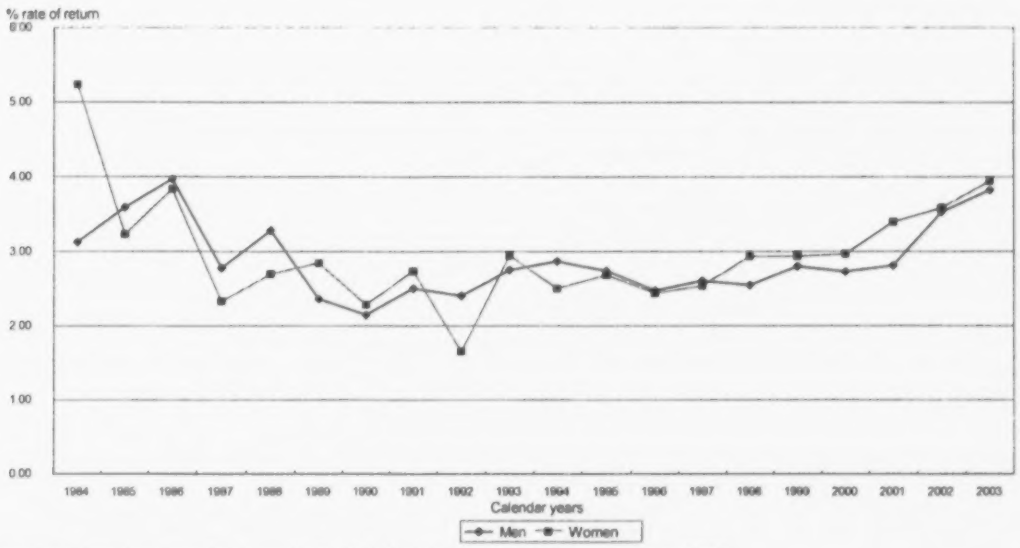
Figure 5 Return models, duration effects (years since departure)



Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

The calendar year variables are also plotted (Figure 6). There is a bit of noise in the patterns, but the overall trends are interesting. Most importantly, the rates declined through 1990 (men) or 1992 (women), remained flat through the 1990s, then rose after 2000. Thus, while departure rates generally rose through most of the 1990s, return rates remained flat. And then when departure rates fell so significantly after 2000, return rates rose in contradistinction. Whatever was attracting Canadians abroad through the 1990s, return rates held steady, while the more recent changes which appear to have been working in the opposite direction since 2000 hold for both departures and returns.

Figure 6 Return models, calendar year effects



Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Furthermore, if annual rates of return have in fact risen by the roughly 50% since the 1990s that these calendar year effects suggest, and are perhaps continuing to rise (they show no sign of falling off), that would lead to very different overall rates of return as these probabilities accumulated over time in more recent periods as compared to earlier ones. If the overall rates of return were in the range of around 15% after 5 years when averaged over the entire period covered by the data (as discussed above), they would be much greater than that with the increasingly higher rates of recent years. Leaving Canada is by no means the point of no return, and especially of late.

Tables 5a and 5b show the same sets of unemployment rate and calendar year variables as seen earlier in the departure models. Here, it is the straight provincial unemployment rate variable that performs best: consistently positive and statistically significant except where are all the different sets of variables are included (Model I). And now it is the ratio variable which takes its turn at doing some odd things, showing a significantly negative effect when included along with the provincial variable on its own when the calendar variables are also omitted (Model IV); making more sense when the latter are included (Model I). The calendar year variables take the same form as discussed above, showing increases since 2000 (or so—depending on the specification).

The general conclusion here, then, is that unemployment rates matter; they are probably correlated with other factors (as discussed in the context of the departure models presented above). The year and unemployment rate measures are related, but the evidence indicates that something has happened in the last few years, regardless of which model is chosen.

Allowing for interactions between market income (at departure) and the period indicators (1990 to 1999 and 2000 to 2003) generates little in the way of significant findings (Table 6).

It should be noted, though, that these models are being identified with just 5,520 men and 4,340 women observed as returning to Canada—ample to identify the significant effects that have been noted, but not so numerous as to be pushed too far, either.

Table 5a Return models, unemployment and calendar year effects — Men

	Models			
	I	II	III	IV
	percent			
Baseline rate	2.503 **	2.386 **	2.412 **	2.745 **
Provincial unemployment rate (%)				
8.7	2.503	...	2.412	2.745
9.7	1.132	...	1.452 **	1.501 **
Canada–United States unemployment ratio				
1.2	2.503	...	...	2.745
1.3	3.248	...	...	1.890 **
Calendar year				
1984	3.123	2.728	2.936	...
1985	3.590 **	3.345 **	3.422 **	...
1986	3.971 **	3.899 **	3.826 **	...
1987	2.777	2.908	2.753	...
1988	3.279	3.751 **	3.336 **	...
1989	2.360	2.730	2.412	...
1990	2.142	2.410	2.168	...
1991	2.503	2.386	2.412	...
1992	2.402	2.100	2.252	...
1993	2.748	2.440	2.624	...
1994	2.867	2.753	2.816	...
1995	2.738	2.845	2.747	...
1996	2.473	2.573	2.505	...
1997	2.603	2.855	2.712	...
1998	2.543	2.988 *	2.708	...
1999	2.797	3.397 **	3.008 *	...
2000	2.725	3.447 **	2.930	...
2001	2.808	3.393 **	2.919	...
2002	3.526 **	3.945 **	3.522 **	...
2003	3.821 **	4.263 **	3.783 **	...

... not applicable

* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Note: The models also include the other variables indicated in the basic specification.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Table 5b Return models, unemployment and calendar year effects — Women

	Models			
	I	II	III	IV
	percent			
Baseline rate	2.733 **	2.602 **	2.606 **	2.794 **
Provincial unemployment rate (%)				
8.7	2.733	...	2.606	2.794
9.7	1.311	...	1.808 *	1.129 **
Canada–United States unemployment ratio				
1.2	2.733	...	...	2.794
1.3	3.823	...	...	2.697
Calendar year				
1984	5.232 **	4.536 **	4.823 **	...
1985	3.229	2.948	3.032	...
1986	3.838 **	3.711 **	3.656 **	...
1987	2.328	2.399	2.301	...
1988	2.693	2.960	2.755	...
1989	2.841	3.221	2.924	...
1990	2.279	2.508	2.316	...
1991	2.733	2.602	2.606	...
1992	1.650 **	1.440 **	1.517 **	...
1993	2.940	2.636	2.769	...
1994	2.500	2.393	2.442	...
1995	2.679	2.723	2.690	...
1996	2.435	2.502	2.477	...
1997	2.532	2.770	2.670	...
1998	2.932	3.381 **	3.182	...
1999	2.932	3.515 **	3.223	...
2000	2.963	3.681 **	3.256	...
2001	3.391	3.963 **	3.568 **	...
2002	3.580 *	3.885 **	3.576 **	...
2003	3.940 **	4.244 **	3.891 **	...

... not applicable

* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Note: The models also include the other variables indicated in the basic specification.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Table 6 Return models, income effects

	Men	Women
	percent	
Baseline rate	3.146 **	2.478 **
Market income		
Less than $10,000	2.328 **	1.998 **
$10,000 to $29,999	2.052 **	2.081 **
$30,000 to $59,999	3.146	2.478
$60,000 to $99,999	4.026 **	3.134
$100,000 and more	4.996 **	1.592
Market income, interaction with post-1990		
Less than $10,000	2.167	2.334
$10,000 to $29,999	3.131 **	2.461
$30,000 to $59,999	3.146	2.478
$60,000 to $99,999	4.027	2.802
$100,000 and more	4.601	2.784
Market income, interaction with post-2000		
Less than $10,000	2.007	1.972 *
$10,000 to $29,999	2.936 **	2.340
$30,000 to $59,999	3.146	2.478
$60,000 to $99,999	3.707	4.108
$100,000 and more	4.243	2.447
Calendar year		
1984	3.976	4.860 **
1985	4.562 **	2.977
1986	5.051 **	3.521 **
1987	3.532	2.125
1988	4.168	2.448
1989	2.988	2.577
1990	2.707	2.067
1991	3.146	2.478
1992	2.934	1.515 **
1993	3.252	2.743
1994	3.321	2.357
1995	3.133	2.541
1996	2.806	2.316
1997	2.942	2.416
1998	2.861	2.804
1999	3.135	2.806
2000	3.049	2.838
2001	3.122	3.160
2002	3.891	3.242 *
2003	4.191 *	3.507 **

* Indicates significance at the 5% level.

** Indicates significance at the 1% level.

Note: The models also include the other variables indicated in the basic specification.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

VI. Conclusion

This paper has provided new empirical evidence on the rates at which Canadians leave the country and subsequently return (or not), covering the period from 1982 to 2003, and Finnie (2001) provides a discussion of the issues surrounding the mobility of Canadians. The major findings may be summarized as follows:

- Overall, somewhere broadly in the range of 0.1% (i.e., one tenth of 1%) of the adult population leaves the country in any given year.
- Departure rates have generally been in synch with the state of the Canadian economy, but the trends have clearly been driven by more than this: declining in the 1980s as the economy was going well; turning up towards the end of the decade, but before the economy began to stall in 1989; rising through the early part of the 1990s as the economy was mired in a deep recession, but then continuing to rise through 1997, by which time the economy had recovered quite strongly; and then declining quite sharply since 2000, when economic factors would have been fairly stable.
- At the micro level, departure rates decline with age (except for the very youngest group); are lower for couples without children than other family types; are higher in British Columbia, quite low for Francophone Quebecers, and very high for Anglophone Quebecers; are somewhat lower for those on Employment Insurance and substantially higher for those at higher-income levels; and are very much higher for recent immigrants to this country.
- Departure rates for those at higher-income levels seem to have shifted upwards somewhat in the 1990s, but returned to pre-1990s rates in more recent years in the case of men, while the shift was maintained for women (i.e., the relatively few of them at those highest-income levels).
- Only a minority of those who leave ever return. Over the entire period covered by this analysis, on the order of around 2.5% returned after being away one year, and about 15% of all leavers return within five years of their departure. The hazard rates estimated here indicate, however, that there was a substantial increase in returns since 2000—mirroring to a large extent what was happening on the departure side.
- The explanatory variables are generally less significant in the return models than in the departure models (not surprising given that all leavers have already demonstrated themselves to be prone to moving), but where the effects do matter they generally mirror the departure patterns: where individuals are more likely to leave, they are less likely to return, and vice versa. An important exception to this rule, and of specific interest, is that return rates are (like departure rates) significantly higher for those at higher-income levels, suggesting such individuals are generally more *mobile*, rather than leavers *per se*.

In terms of further empirical research, the patterns for recent immigrants seem particularly worth pursuing in more detail, since such individuals are often touted to represent an important flow of human capital into the country—and indeed, one that can at least help offset those who leave the country. How many immigrants to Canada re-emigrate thereafter? To which countries to they go? Are the relationships between the various explanatory variables and departure and return rates structurally different for immigrants and non-immigrants? The Longitudinal Administrative Database could be used to address such issues.

VII. Appendix

Table A1 Departure full logit models

	Men		Women	
Total observations	37,124,845		37,267,060	
Stayers	37,092,445		37,237,565	
Leavers	32,395		29,495	
	Estimate	Standard error	Estimate	Standard error
Intercept	-7.334 **	(0.049)	-7.049 **	(0.051)
Age category				
18 to 24 years	-0.086 **	(0.024)	0.240 **	(0.022)
25 to 34 years	0.507 **	(0.015)	0.589 **	(0.015)
35 to 44 years	...	...	...	...
45 to 54 years	-0.261 **	(0.018)	-0.255 **	(0.021)
55 to 64 years	-0.612 **	(0.024)	-0.705 **	(0.029)
65 years and over	-1.254 **	(0.032)	-1.445 **	(0.034)
Area size of residence (inhabitants)				
0 to 14,999	-0.721 **	(0.020)	-0.687 **	(0.020)
15,000 to 99,999	-0.482 **	(0.022)	-0.509 **	(0.023)
100,000 and more	...	...	...	...
Provincial unemployment rate	-0.055 **	(0.011)	-0.032 **	(0.012)
Canada–United States unemployment ratio	0.303 **	(0.066)	0.173 **	(0.072)
Employment Insurance				
None	...	...	...	...
Some	-0.538 **	(0.021)	-0.322 **	(0.019)
Family status				
Couple with children	...	...	...	...
Couple without children	-0.965 **	(0.037)	-0.909 **	(0.042)
Single with children	0.293 **	(0.014)	-0.004	(0.014)
Single without children	0.157 **	(0.022)	0.239 **	(0.021)
Minority language				
English in Quebec	1.385 **	(0.029)	1.406 **	(0.031)
French outside Quebec	0.243 **	(0.061)	0.167 **	(0.066)
Majority language	...	...	...	...
Market income in year prior to departure				
Less than $10,000	-0.015	(0.019)	-0.394 **	(0.016)
$10,000 to $29,999	-0.004	(0.017)	-0.249 **	(0.016)
$30,000 to $59,999				
$60,000 to $99,999	0.745 **	(0.017)	0.474 **	(0.025)
$100,000 and more	1.771 **	(0.019)	1.059 **	(0.042)

Table A1 Departure full logit models (concluded)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Province/region				
Ontario	...	...	...	...
Atlantic	-0.370 **	(0.042)	-0.329 **	(0.043)
British Columbia	0.359 **	(0.017)	0.393 **	(0.018)
Prairies	0.112 **	(0.016)	0.111 **	(0.017)
Quebec	-0.933 **	(0.028)	-0.987 **	(0.029)
Years since immigration				
0	2.313 **	(0.118)	2.183 **	(0.126)
1 to 3	2.511 **	(0.028)	2.198 **	(0.032)
4 to 6	2.618 **	(0.021)	2.348 **	(0.024)
7 to 9	1.923 **	(0.028)	1.737 **	(0.030)
10 to 12	1.557 **	(0.035)	1.326 **	(0.040)
13 to 15	1.238 **	(0.047)	1.047 **	(0.053)
16 and over	0.827 **	(0.053)	0.865 **	(0.055)
Year of departure				
1983	0.501 **	(0.060)	0.511 **	(0.065)
1984	0.590 **	(0.063)	0.514 **	(0.069)
1985	0.191 **	(0.051)	0.218 **	(0.055)
1986	0.060	(0.049)	0.202 **	(0.051)
1987	-0.477 **	(0.053)	-0.254 **	(0.054)
1988	-0.244 **	(0.045)	-0.002	(0.046)
1989	-0.170 **	(0.042)	-0.085	(0.045)
1990	-0.269 **	(0.043)	-0.105 **	(0.045)
1991	...	...	...	...
1992	0.154 **	(0.043)	0.254 **	(0.046)
1993	0.210 **	(0.048)	0.254 **	(0.051)
1994	0.355 **	(0.044)	0.286 **	(0.048)
1995	0.363 **	(0.039)	0.285 **	(0.043)
1996	0.457 **	(0.036)	0.440 **	(0.039)
1997	0.436 **	(0.036)	0.473 **	(0.039)
1998	0.316 **	(0.038)	0.362 **	(0.041)
1999	0.314 **	(0.040)	0.362 **	(0.044)
2000	0.351 **	(0.041)	0.369 **	(0.045)
2001	0.120 **	(0.042)	0.265 **	(0.046)
2002	-0.079 *	(0.039)	0.125 **	(0.041)
2003	0.048	(0.038)	0.261 **	(0.039)

... not applicable

* Significant at the 95% level.

** Significant at the 99% level.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Table A2a Departure full logit models — With income interaction

	Men		Women	
Total observations	37,124,845		37,267,060	
Stayers	37,092,445		37,237,565	
Leavers	32,395		29,495	
	Estimate	Standard error	Estimate	Standard error
Intercept	-7.481 **	(0.071)	-7.232 **	(0.067)
Age category				
18 to 24 years	-0.094 **	(0.024)	0.237 **	(0.022)
25 to 34 years	0.509 **	(0.015)	0.590 **	(0.015)
35 to 44 years	...	...	...	...
45 to 54 years	-0.264 **	(0.018)	-0.256 **	(0.021)
55 to 64 years	-0.612 **	(0.024)	-0.705 **	(0.029)
65 years and over	-1.257 **	(0.032)	-1.448 **	(0.034)
Area size of residence (inhabitants)				
0 to 14,999	-0.722 **	(0.020)	-0.685 **	(0.020)
15,000 to 99,999	-0.483 **	(0.022)	-0.508 **	(0.023)
100,000 and more	...	...	...	...
Provincial unemployment rate	-0.054 **	(0.011)	-0.031 **	(0.012)
Canada–United States unemployment ratio	0.291 **	(0.066)	0.162 **	(0.072)
Employment Insurance				
None	...	...	...	...
Some	-0.535 **	(0.021)	-0.321 **	(0.019)
Family status				
Couple with children	...	...	...	...
Couple without children	-0.965 **	(0.037)	-0.909 **	(0.042)
Single with children	0.293 **	(0.014)	-0.002	(0.014)
Single without children	0.157 **	(0.022)	0.240 **	(0.021)
Minority language				
English in Quebec	1.385 **	(0.029)	1.406 **	(0.031)
French outside Quebec	0.244 **	(0.061)	0.169 **	(0.066)
Majority language	...	...	...	...

Table A2a Departure full logit models — With income interaction (continued)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Market income in year prior to departure				
Less than $10,000	0.030	(0.039)	-0.444 **	(0.031)
$10,000 to $29,999	0.088 **	(0.032)	-0.198 **	(0.029)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	0.705 **	(0.032)	0.302 **	(0.057)
$100,000 and more	1.691 **	(0.038)	0.686 **	(0.119)
Market income, interaction with post-1990				
Less than $10,000	-0.152 **	(0.045)	-0.002	(0.037)
$10,000 to $29,999	-0.162 **	(0.040)	-0.067 *	(0.037)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	0.102 **	(0.039)	0.221 **	(0.066)
$100,000 and more	0.182 **	(0.045)	0.406 **	(0.133)
Market income, interaction with post-2000				
Less than $10,000	0.152	(0.051)	0.201	(0.043)
$10,000 to $29,999	-0.035	(0.047)	-0.082	(0.044)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	-0.048	(0.048)	0.210 **	(0.073)
$100,000 and more	-0.036	(0.053)	0.491 **	(0.137)
Province/region				
Ontario	...	...	...	...
Atlantic	-0.365 **	(0.042)	-0.323 **	(0.043)
British-Columbia	0.357 **	(0.017)	0.394 **	(0.018)
Prairies	0.112 **	(0.016)	0.111 **	(0.017)
Quebec	-0.930 **	(0.028)	-0.983 **	(0.029)

Table A2a Departure full logit models — With income interaction (concluded)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Years since immigration				
0	2.329 **	(0.118)	2.180 **	(0.126)
1 to 3	2.520 **	(0.028)	2.198 **	(0.032)
4 to 6	2.629 **	(0.022)	2.348 **	(0.024)
7 to 9	1.924 **	(0.028)	1.738 **	(0.030)
10 to 12	1.554 **	(0.035)	1.327 **	(0.040)
13 to 15	1.235 **	(0.047)	1.050 **	(0.053)
16 and over	0.835 **	(0.053)	0.870 **	(0.055)
Year of departure				
1983	0.648 **	(0.069)	0.501 **	(0.069)
1984	0.733 **	(0.072)	0.503 **	(0.073)
1985	0.337 **	(0.062)	0.211 **	(0.059)
1986	0.205 **	(0.059)	0.196 **	(0.056)
1987	-0.333 **	(0.063)	-0.260 **	(0.058)
1988	-0.098	(0.056)	-0.006	(0.051)
1989	-0.022	(0.054)	-0.088	(0.050)
1990	-0.121 *	(0.054)	-0.106 *	(0.050)
1991	...	...	...	...
1992	0.158 **	(0.043)	0.253 **	(0.046)
1993	0.217 **	(0.048)	0.254 **	(0.051)
1994	0.367 **	(0.044)	0.287 **	(0.048)
1995	0.375 **	(0.039)	0.287 **	(0.043)
1996	0.471 **	(0.036)	0.443 **	(0.039)
1997	0.450 **	(0.036)	0.477 **	(0.039)
1998	0.329 **	(0.038)	0.368 **	(0.041)
1999	0.326 **	(0.040)	0.367 **	(0.044)
2000	0.638 **	(0.050)	0.508 **	(0.050)
2001	0.411 **	(0.050)	0.404 **	(0.050)
2002	0.211 **	(0.048)	0.264 **	(0.046)
2003	0.333 **	(0.046)	0.394 **	(0.044)

... not applicable

* Significant at the 95% level.

** Significant at the 99% level.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Table A2b Departure full logit models — With alternative calendar year interactions

	Men		Women	
Total observations	37,124,845		37,267,060	
Stayers	37,092,445		37,237,565	
Leavers	32,395		29,495	
	Estimate	Standard error	Estimate	Standard error
Intercept	-7.568 **	(0.070)	-7.495 **	(0.066)
Age category				
18 to 24 years	-0.180 **	(0.024)	-0.088 **	(0.022)
25 to 34 years	0.394 **	(0.015)	0.451 **	(0.015)
35 to 44 years	...	...	...	...
45 to 54 years	-0.554 **	(0.018)	-0.759 **	(0.021)
55 to 64 years	-1.136 **	(0.025)	-1.417 **	(0.030)
65 years and over	-1.684 **	(0.033)	-2.127 **	(0.035)
Area size of residence (inhabitants)				
0 to 14,000	-0.674 **	(0.020)	-0.613 **	(0.020)
15,000 to 99,000	-0.457 **	(0.022)	-0.458 **	(0.023)
100,000 and more	...	...	...	...
Provincial unemployment rate	-0.056 **	(0.011)	-0.042 **	(0.011)
Canada–United States Unemployment ratio	0.299 **	(0.065)	0.227 **	(0.070)
Unemployment Insurance				
None				
Some	-0.538 **	(0.021)	-0.256 **	(0.019)
Family status				
Couple with children	...	...	...	...
Couple without children	0.657 **	(0.015)	1.038 **	(0.017)
Single with children	-0.211 **	(0.045)	-0.458 **	(0.030)
Single without children	0.658 **	(0.015)	0.934 **	(0.017)
Minority language				
English in Quebec	1.382 **	(0.029)	1.391 **	(0.031)
French outside Quebec	0.232 **	(0.061)	0.114	(0.066)
Majority language	...	...	...	...

Table A2b Departure full logit models — With alternative calendar year interactions (continued)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Market income in year prior to departure				
Less than $10,000	0.086 *	(0.041)	-0.031	(0.033)
$10,000 to $29,999	0.088 **	(0.034)	-0.072 *	(0.032)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	0.703 **	(0.034)	0.253 **	(0.062)
$100,000 and more	1.684 **	(0.041)	0.759 **	(0.133)
Market income, interaction with post-1990				
Less than $10,000	-0.243 **	(0.048)	-0.198 **	(0.040)
$10,000 to $29,999	-0.181 **	(0.043)	-0.136 **	(0.040)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	0.127 **	(0.042)	0.210 **	(0.073)
$100,000 and more	0.244 **	(0.049)	0.287	(0.151)
Market income, interaction with post-1996				
Less than $10,000	0.018	(0.048)	0.009	(0.041)
$10,000 to $29,999	-0.094 *	(0.044)	-0.124 **	(0.041)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	0.004	(0.044)	0.320 **	(0.073)
$100,000 and more	-0.010	(0.050)	0.460 **	(0.144)
Taxation region				
Ontario	...	...	...	...
Atlantic	-0.366 **	(0.042)	-0.343 **	(0.043)
British Columbia	0.347 **	(0.017)	0.348 **	(0.018)
Prairies	0.118 **	(0.016)	0.107 **	(0.017)
Quebec	-0.926 **	(0.028)	-0.999 **	(0.029)

Table A2b Departure full logit models — With alternative calendar year interactions (concluded)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Year since immigration				
0	2.284 **	(0.118)	1.971 **	(0.126)
1 to 3	2.525 **	(0.028)	2.142 **	(0.032)
4 to 6	2.665 **	(0.021)	2.374 **	(0.024)
7 to 9	1.969 **	(0.028)	1.813 **	(0.030)
10 to 12	1.601 **	(0.035)	1.424 **	(0.040)
13 to 15	1.285 **	(0.047)	1.152 **	(0.053)
16 and over	0.885 **	(0.053)	0.981 **	(0.055)
Year of departure				
1983	0.784 **	(0.070)	0.701 **	(0.068)
1984	0.865 **	(0.073)	0.692 **	(0.072)
1985	0.465 **	(0.063)	0.386 **	(0.060)
1986	0.328 **	(0.061)	0.358 **	(0.056)
1987	-0.212 **	(0.064)	-0.106	(0.059)
1988	0.007	(0.058)	0.115 *	(0.052)
1989	0.072	(0.056)	0.024	(0.051)
1990	-0.273 **	(0.043)	-0.109 *	(0.045)
1991	...	...	...	...
1992	0.161 **	(0.043)	0.268 **	(0.046)
1993	0.211 **	(0.048)	0.279 **	(0.051)
1994	0.358 **	(0.044)	0.303 **	(0.047)
1995	0.366 **	(0.039)	0.296 **	(0.042)
1996	0.459 **	(0.036)	0.440 **	(0.039)
1997	0.436 **	(0.036)	0.469 **	(0.039)
1998	0.553 **	(0.046)	0.471 **	(0.045)
1999	0.555 **	(0.048)	0.464 **	(0.048)
2000	0.595 **	(0.049)	0.464 **	(0.049)
2001	0.365 **	(0.050)	0.369 **	(0.049)
2002	0.166 **	(0.047)	0.246 **	(0.046)
2003	0.290 **	(0.046)	0.382 **	(0.044)

... not applicable

* Significant at the 95% level.

** Significant at the 99% level.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Table A3 Return full logit models

	Men		Women	
Total observations	227,045		214,450	
Stayers	221,525		210,110	
Leavers	5,520		4,340	
	Estimate	Standard error	Estimate	Standard error
Intercept	-3.219 **	(0.190)	-3.253 **	(0.204)
Age category				
18 to 24 years	0.363 **	(0.060)	0.334 **	(0.055)
25 to 34 years	0.262 **	(0.036)	0.216 **	(0.041)
35 to 44 years	...	...	...	...
45 to 54 years	0.057	(0.044)	-0.004	(0.059)
55 to 64 years	0.094	(0.061)	-0.100	(0.088)
65 years and over	-0.455 **	(0.116)	-0.390 **	(0.127)
Area size of residence (inhabitants)				
0 to 14,999	0.139 **	(0.045)	0.109 *	(0.050)
15,000 to 99,999	0.089	(0.050)	0.150 **	(0.055)
100,000 and more	...	...	...	...
Provincial unemployment rate	-0.081	(0.048)	-0.075	(0.050)
Canada–United States unemployment ratio	0.174	(0.269)	0.224	(0.278)
Employment insurance				
None	...	...	...	...
Some	0.008	(0.051)	0.040	(0.048)
Family status				
Couple with children	...	...	...	...
Couple without children	0.070	(0.098)	0.131	(0.123)
Single with children	-0.155 **	(0.034)	-0.076 *	(0.036)
Single without children	-0.026	(0.057)	0.083 *	(0.053)

Table A3 Return full logit models (continued)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Minority language				
English in Quebec	-0.343 **	(0.073)	-0.329 **	(0.085)
French outside Quebec	0.379 **	(0.132)	0.116	(0.165)
Majority language	...	...	...	...
Market income in year prior to departure				
Less than $10,000	-0.363 **	(0.051)	-0.134 **	(0.042)
$10,000 to $29,999	-0.144 **	(0.043)	-0.074	(0.041)
$30,000 to $59,999	...	...	...	...
$60,000 to $99,999	0.237 **	(0.040)	0.208 **	(0.062)
$100,000 and more	0.391 **	(0.045)	-0.005	(0.121)
Province/region				
Ontario	...	...	...	...
Atlantic	0.403 **	(0.100)	0.288 **	(0.109)
British Columbia	0.128 **	(0.048)	0.096	(0.052)
Prairies	0.243 **	(0.039)	0.232 **	(0.044)
Quebec	0.486 **	(0.069)	0.393 **	(0.077)
Years since immigration				
0	-0.738 *	(0.350)	-0.303	(0.357)
1 to 3	-1.016 **	(0.093)	-0.817 **	(0.111)
4 to 6	-0.791 **	(0.072)	-0.879 **	(0.090)
7 to 9	-0.710 **	(0.099)	-0.517 **	(0.107)
10 to 12	-0.555 **	(0.123)	-0.608 **	(0.147)
13 to 15	-0.610 **	(0.165)	-0.701 **	(0.212)
16 and over	-0.486 **	(0.188)	-0.660 **	(0.241)

Table A3 Return full logit models (concluded)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Duration term (years)				
1	...	...	...	...
2	0.304 **	(0.043)	0.254 **	(0.047)
3	0.175 **	(0.046)	-0.022	(0.052)
4	-0.223 **	(0.053)	-0.351 **	(0.059)
5	-0.448 **	(0.060)	-0.692 **	(0.068)
6	-0.693 **	(0.068)	-0.789 **	(0.074)
7	-0.703 **	(0.072)	-1.089 **	(0.088)
8	-1.029 **	(0.087)	-1.239 **	(0.099)
9	-1.247 **	(0.101)	-1.416 **	(0.113)
9 and over	-1.838 **	(0.066)	-2.058 **	(0.073)
Year of departure				
1984	0.221	(0.191)	0.649 **	(0.172)
1985	0.361 **	(0.131)	0.167	(0.146)
1986	0.462 **	(0.115)	0.340 **	(0.126)
1987	0.104	(0.128)	-0.161	(0.144)
1988	0.270	(0.145)	-0.015	(0.159)
1989	-0.059	(0.156)	0.039	(0.162)
1990	-0.156	(0.146)	-0.182	(0.155)
1991	...	...	...	...
1992	-0.041	(0.126)	-0.505 **	(0.151)
1993	0.094	(0.114)	0.073	(0.122)
1994	0.136	(0.111)	-0.089	(0.123)
1995	0.090	(0.122)	-0.020	(0.132)
1996	-0.012	(0.130)	-0.115	(0.140)
1997	0.039	(0.158)	-0.076	(0.168)
1998	0.016	(0.186)	0.070	(0.195)
1999	0.111	(0.199)	0.070	(0.210)
2000	0.085	(0.201)	0.081	(0.212)
2001	0.115	(0.159)	0.216	(0.168)
2002	0.343 **	(0.116)	0.270 *	(0.125)
2003	0.423 **	(0.110)	0.366 **	(0.119)

... not applicable

* Significant at the 95% level.

** Significant at the 99% level.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Table A4 Return full logit models with income interaction

	Men		Women	
Total observations	227,045		214,450	
Stayers	221,525		210,110	
Leavers	5,520		4,340	
	Estimate	Standard error	Estimate	Standard error
Intercept	-2.999 **	(0.243)	-3.350 **	(0.248)
Age category				
18 to 24 years	0.375 **	(0.060)	0.335 **	(0.055)
25 to 34 years	0.263 **	(0.036)	0.214 **	(0.041)
35 to 44 years	...	...	...	...
45 to 54 years	0.058	(0.044)	-0.002	(0.059)
55 to 64 years	0.095	(0.061)	-0.102	(0.088)
65 years and over	-0.454 **	(0.116)	-0.391 **	(0.127)
Area size of residence (inhabitants)				
0 to 14,999	0.137 **	(0.045)	0.110 *	(0.050)
15,000 to 99,999	0.088	(0.050)	0.150 **	(0.055)
More than 100,000	...	...	...	...
Provincial unemployment rate	-0.079	(0.048)	-0.075	(0.050)
Canada–United States unemployment ratio	0.168	(0.269)	0.223	(0.278)
Employment Insurance				
None	...	...	...	...
Some	0.021	(0.051)	0.042	(0.048)
Family status				
Couple with children	...	...	...	...
Couple without children	0.069	(0.098)	0.132	(0.123)
Single with children	-0.156 **	(0.034)	-0.082 *	(0.036)
Single without children	-0.033	(0.057)	0.077	(0.053)
Minority language				
English in Quebec	-0.343 **	(0.073)	-0.327 **	(0.085)
French outside Quebec	0.391 **	(0.132)	0.120	(0.165)
Majority language	...	...	...	...

Table A4 Return full logit models with income interaction (continued)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Market income in year prior to departure				
Less than $10,000	-0.301 **	(0.072)	-0.215 **	(0.065)
$10,000 to $29,999	-0.427 **	(0.076)	-0.175 **	(0.067)
$30,000 to $59,999				
$60,000 to $99,999	0.247 **	(0.065)	0.235	(0.120)
$100,000 and more	0.463 **	(0.075)	-0.443	(0.347)
Market income, interaction with post-1990				
Less than $10,000	-0.072	(0.076)	0.155	(0.076)
$10,000 to $29,999	0.423 **	(0.093)	0.168	(0.086)
$30,000 to $59,999				
$60,000 to $99,999	0.000	(0.083)	-0.112	(0.146)
$100,000 and more	-0.082	(0.093)	0.559	(0.377)
Market income, interaction with post-2000				
Less than $10,000	-0.148	(0.121)	-0.013	(0.119)
$10,000 to $29,999	0.358 **	(0.147)	0.117	(0.138)
$30,000 to $59,999				
$60,000 to $99,999	-0.083	(0.140)	0.271	(0.191)
$100,000 and more	-0.163	(0.147)	0.430	(0.432)
Province/region				
Ontario				
Atlantic	0.398 **	(0.100)	-0.323 **	(0.043)
British Columbia	0.127 **	(0.048)	0.394	(0.018)
Prairies	0.244 **	(0.039)	0.111 **	(0.017)
Quebec	0.482 **	(0.069)	-0.983 **	(0.029)

Table A4 Return full logit models with income interaction (concluded)

	Men		Women	
	Estimate	Standard error	Estimate	Standard error
Years since immigration				
0	-0.734 *	(0.350)	-0.287	(0.357)
1 to 3	-1.024 **	(0.093)	-0.814 **	(0.111)
4 to 6	-0.800 **	(0.072)	-0.882 **	(0.090)
7 to 9	-0.710 **	(0.099)	-0.518 **	(0.107)
10 to 12	-0.558 **	(0.123)	-0.602 **	(0.147)
13 to 15	-0.607 **	(0.165)	-0.703 **	(0.212)
16 and over	-0.473 **	(0.188)	-0.683 **	(0.241)
Duration term (years)				
1	...	...	...	...
2	0.310 **	(0.043)	0.265 **	(0.047)
3	0.188 **	(0.047)	0.000	(0.053)
4	-0.202 **	(0.056)	-0.315 **	(0.061)
5	-0.422 **	(0.062)	-0.657 **	(0.070)
6	-0.660 **	(0.071)	-0.754 **	(0.076)
7	-0.662 **	(0.076)	-1.057 **	(0.090)
8	-0.977 **	(0.091)	-1.213 **	(0.102)
9	-1.181 **	(0.106)	-1.396 **	(0.115)
9 and over	-1.712 **	(0.084)	-2.055 **	(0.084)
Year of departure				
1984	0.234	(0.191)	0.673 **	(0.172)
1985	0.372 **	(0.131)	0.183	(0.146)
1986	0.473 **	(0.115)	0.351 **	(0.127)
1987	0.116	(0.128)	-0.154	(0.144)
1988	0.281	(0.145)	-0.012	(0.159)
1989	-0.051	(0.156)	0.039	(0.162)
1990	-0.150	(0.146)	-0.182	(0.155)
1991	...	...	...	...
1992	-0.070	(0.127)	-0.492 **	(0.151)
1993	0.033	(0.117)	0.102	(0.123)
1994	0.054	(0.116)	-0.050	(0.126)
1995	-0.004	(0.129)	0.025	(0.136)
1996	-0.114	(0.137)	-0.068	(0.144)
1997	-0.067	(0.165)	-0.025	(0.172)
1998	-0.095	(0.192)	0.123	(0.199)
1999	-0.003	(0.206)	0.124	(0.214)
2000	-0.031	(0.208)	0.135	(0.217)
2001	-0.008	(0.168)	0.243	(0.173)
2002	0.213	(0.130)	0.269 *	(0.133)
2003	0.287 **	(0.127)	0.347 **	(0.130)

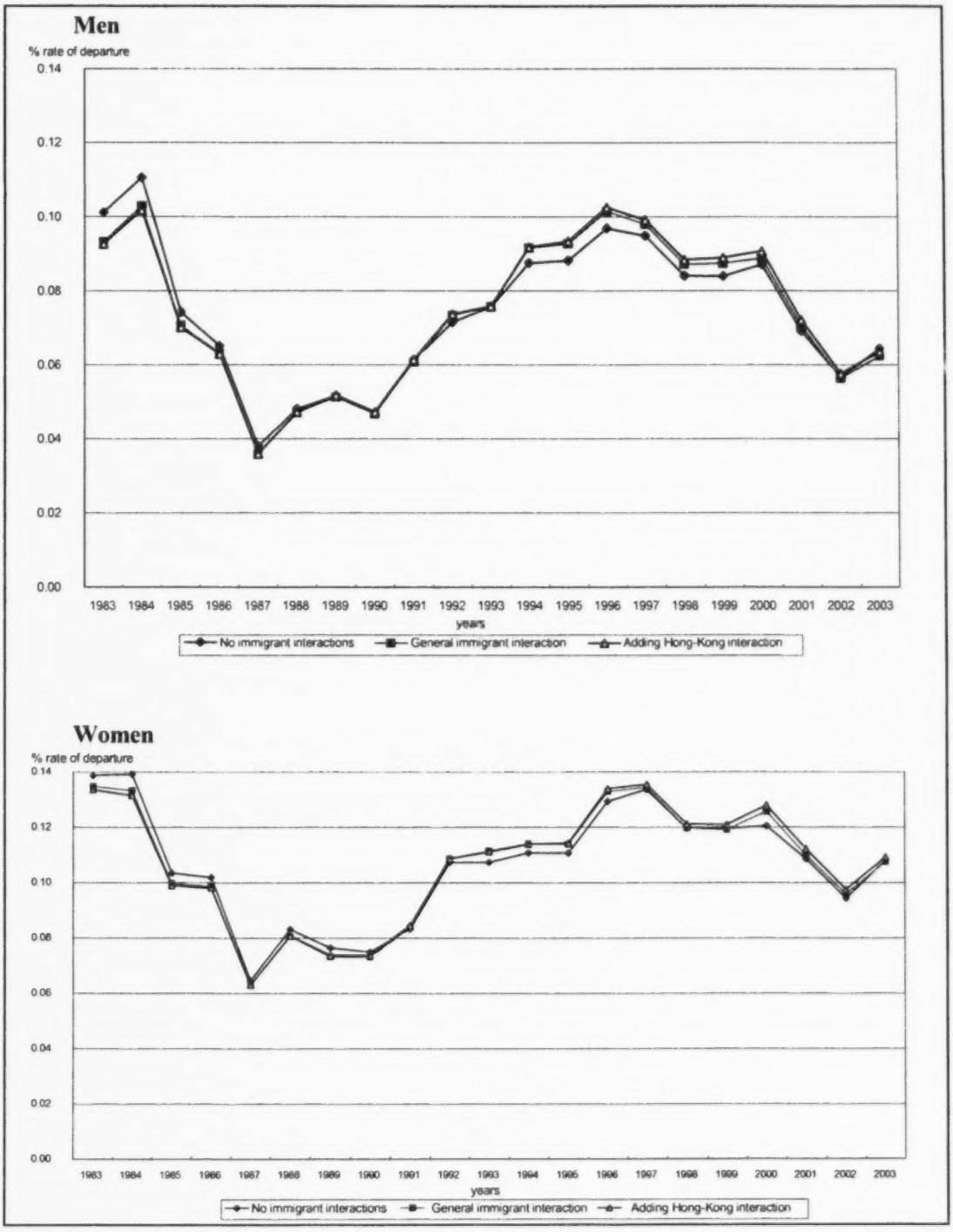
... not applicable

* Significant at the 95% level.

** Significant at the 99% level.

Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

Figure A1 Departure models, calendar year effects with immigrant-year interactions



Source: Statistics Canada, Longitudinal Administrative Database, 1982 to 2003.

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